

	ELECTRICAL	SYM	IBOLS
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
A	STREET LIGHT, 150W HIGH PRESSURE SODIUM LUMINAIRE,		
←	GALVANIZED STEEL POLE, XFMR BASE & BRACKET ARM,		
	SEE DETAIL A/E-34	\square	HECO 2' x 4' PULLBOX
- ∞	STREET LIGHT, 100W HIGH PRESSURE SODIUM LUMINAIRE,		
<u> </u>	GALVANIZED STEEL POLE & BRACKET ARM, SEE DETAIL A/E-35	X	HECO 3' X 5' HANDHOLE
	STREET LIGHT, 70W HIGH PRESSURE SODIUM LUMINAIRE,		HECO 5' X 8' HANDHOLE
	GALVANIZED STEEL POLE & BRACKET ARM, SEE DETAIL A/E-35		
<u>~€</u>	EXST. STREET LIGHT, 250W HIGH PRESSURE SODIUM LUMINAIRE		HECO 4' X 6' HANDHOLE HECO 6' X 11' MANHOLE
\\ -(\\\)	EXST. STREET LIGHT, 150W HIGH PRESSURE SODIUM LUMINAIRE	0	HECO 6 A 11 MANHOLL
			HECO 6' X 14' MANHOLE
	GROUND ROD, 5/8" DIA. X 8'-0" (BMZ)	•	TILOG O X 11 MATTICE
←	OKOOND KOD, O'O BIN. X C C (BMZ)	∑ ∑ S	EXST. HECO HANDHOLE
			EXST. HECO MANHOLE
			EXST. HECO MANHOLE
	BREAKLINE TO BEGIN & END DUCT SECTION TYPE		SIC 3' X 5' HANDHOLE
<u> </u>	ELECTRIC/SIGNAL DUCTLINE WITH DESIGNATORS;		SIC 4' X 6' HANDHOLE
	INDICATES TYPE "A" DUCT SECTION WITH "2-2E" DUCTS. SEE		
A (2-2E)	SHEET E-21, E-22 & E-23 FOR DUCT SECTIONS AND		EXST. SIC MANHOLE
	SHEET E-5 FOR CONDUIT SCHEDULE	jumpropus	
	STUB, CAP, & MARK CONDUIT(S) WITH CONCRETE MARKER,		CATV 2' X 4' PULLBOX
	SEE DETAIL D/E-26		CATV 3' X 5' HANDHOLE
	SAWCUT EXST. A.C. PAVEMENT, CONC. SIDEWALK, CURB & GUTTER PRIOR TO TRENCH EXCAVATION. RESTORE SUBBASE, BASECOURSE,		EXST. CATV HANDHOLE
	PAVEMENT, CONC. SIDEWALK, CURB & GUTTER PER CITY	L 10	EAST. CATY HANDHOLL
	REQUIREMENTS, THICKNESS SHALL MATCH EXST ROAD DESIGN	MANAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	
	STREET LIGHT DUCTS & WIRING		EXST. HTCO MANHOLE
	TRAFFIC SIGNAL DUCT & PULLWIRE	<u> </u>	
			STREET LIGHT SLD-1 HANDHOLE, SEE DETAIL A/E-33
			STREET LIGHT SLD-4 HANDHOLE, SEE DETAIL B/E-33
e	EXST. UNDERGROUND DUCTLINE & WIRING		
	EXST. UNDERGROUND TEL. CABLES		TRAFFIC SIGNAL TYPE "A" PULLBOX, SEE DETAIL A/E-36
<u> </u>	EXST. UNDERGROUND STREET LIGHT CABLES & CONDUITS		TRAFFIC SIGNAL TYPE "B" PULLBOX, SEE DETAIL B/E-36
	EXST. UNDERGROUND TRAFFIC SIGNAL CONDUITS		TRAFFIC SIGNAL TYPE "C" PULLBOX, SEE DETAIL C/E-36
ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν	EXST. UNDERGROUND SECONDARY POWER CABLES AND CONDUIT		
		, , , , , , , , , , , , , , , , , , ,	

-			HECO TRANSFORMER PAD LOT, SEE DETAIL B/E-26
			HECO SWITCHING EASEMENT PAD LOT, SEE DETAIL A/E-26
		***	HECO PMH-3 SWITCHGEAR PAD LOT, SEE DETAIL C/E-26
			EXST. HECO XFMR EASEMENT PAD LOT
			EXST. HECO SWITCHING EASEMENT PAD LOT
		[6]	CONCRETE STUB OUT MARKER, SEE DETAIL D/E-26
		S	CATV POWER SUPPLY EQUIP., 6' X 6' EASEMENT, SEE
		V	DETAIL B/E-27
			NOTE SYMBOL, SEE PLAN FOR NOTES
			,
		<u> </u>	

GENERAL NOTES

- PROVIDE 5' MINIMUM CLEAR BETWEEN STREET LIGHT POLES & SEWER LATERALS.
- PROVIDE 3' MINIMUM CLEAR BETWEEN PULLBOXES & SEWER LATERALS.
- PROVIDE 6' MINIMUM CLEAR BETWEEN TRANSFORMER PADS & SEWER LATERALS (DO NOT STRADDLE).
- PROVIDE 3' MINIMUM CLEAR BETWEEN DUCTLINES & SEWER LINES.
- CONTRACTOR SHALL VERIFY SEWER LATERAL LOCATIONS WITH CIVIL SHEETS.
- PROVIDE 3' MINIMUM HORIZONTAL CLEAR & 6" VERTICAL CLEAR BETWEEN WATER LINES & ALL ELECTRICAL SYSTEMS.
- CONTRACTOR SHALL BE RESPONSIBLE TO ARRANGE WITH THE GENERAL CONTRACTOR TO IDENTIFY THE LOCATIONS OF CIVIL SITE UTILITIES, DRIVEWAYS, ETC. PRIOR TO ELECTRICAL CONTRACTORS LAYOUT OF ELECTRIC, TELEPHONE, STREET LIGHT, TRAFFIC SIGNAL, AND CATV SYSTEMS.

NOTES FOR CONSTRUCTION

- a. THE LOCATION OF OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN PROXIMITY OF UNDERGROUND LINES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT UNDER ANY OVERHEAD LINES.
- b. THE CONTRACTOR IS TO COMPLY WITH THE DIRECTIONS OF THE STATE OF HAWALL OCCUPATIONAL SAFETY AND HEALTH LAW (DOSH).
- c. WHEN TRENCH EXCAVATION IS ADJACENT TO EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.
- AS REQUIRED BY THE CITY AND COUNTY OF HONOLULU, THE CONTRACTOR SHALL PROVIDE OFF-DUTY POLICE OFFICERS TO CONTROL THE FLOW OF TRAFFIC.
- WHERE PEDESTRIAN WALKWAYS EXIST, SUCH WALKWAYS SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
- f. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHT-OF-WAYS ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
- THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN BY THE ENGINEER TO EXIST FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.

DRAWING REVIEW Reviewed for HECO's Facilities Only Date 12/3/08 By & U. Customer Installations Department Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

7/16/09

DATE

-DATE-

APPROVED BY:

CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY DEPARTMENT OF TRANSPORTATION SERVICES CITY AND COUNTY OF HONOLULU

CHIEF. TRAFFIC REVIEW BRANCH DEPARTMENT OF PLANNING AND PERMITTING



ELECTRICAL SYMBOLS, MAPS, NOTES

APPROVED: 100 2009 THIS WORK WAS PREPARED BY AWAIIAN FLECTRIC CO. ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

DRAWN BY: RN ENGINEER: GF CHECKED BY: GF CHIEF, MECHANICAL/ELECTRICAL DIVISION, D.D.C. DATE SANDWICH ISLES COMMUNICATIONS, INC. DATE

DWG. NO. **E-1** SHEET 42 OF 94 SHEETS

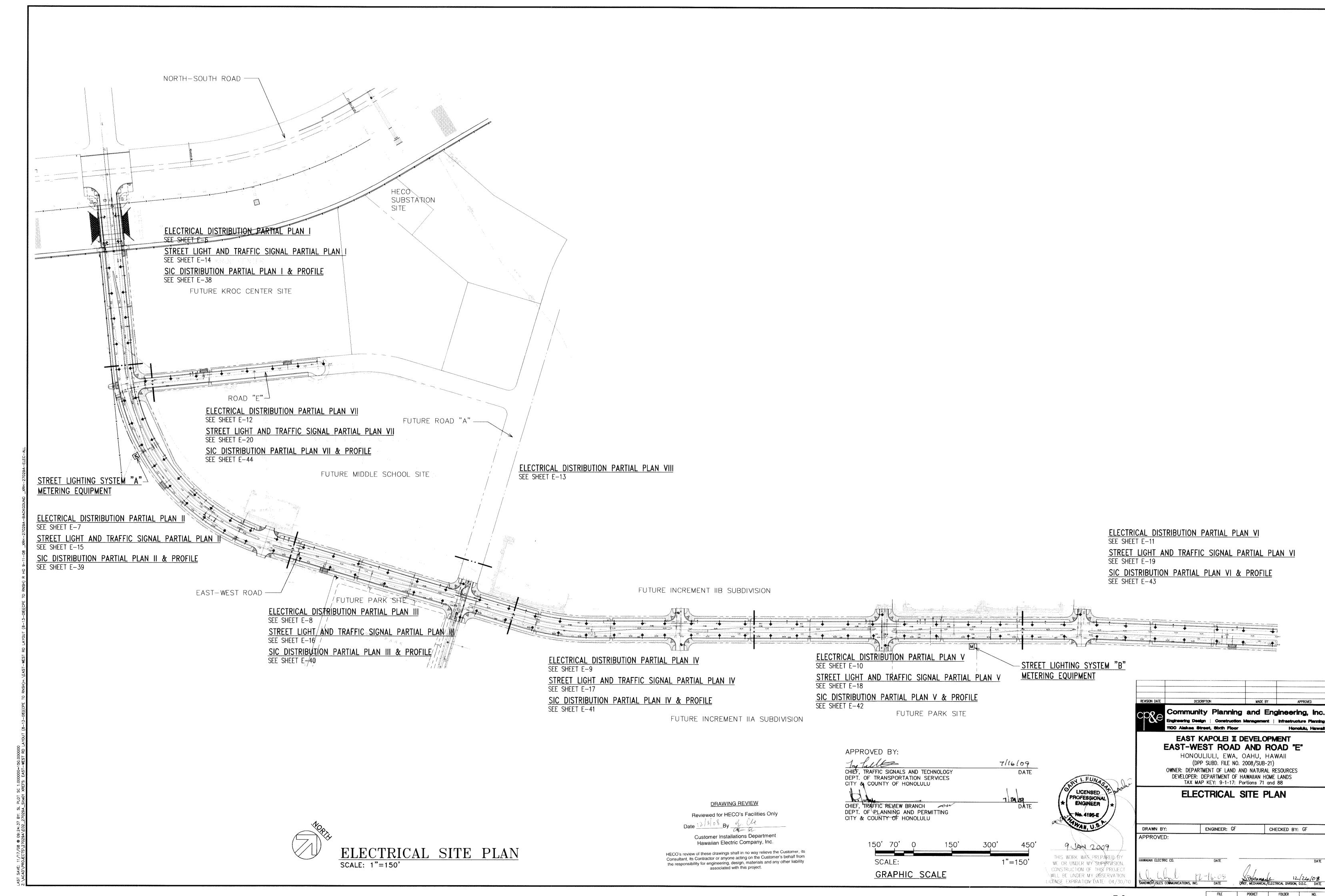
ÉTELNSE EXPIRAJION DATE: 04/31

Community Planning and Engineering, Inc.

1100 Alekea Street, Stxth Floor EAST KAPOLEI II DEVELOPMENT

EAST-WEST ROAD AND ROAD "E" HONOULIULI, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2008/SUB-21) OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES

DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portions 71 and 88



DWG. NO. **E-2** SHEET <u>43</u> OF <u>24</u> SHEETS

HAWAIIAN ELECTRIC COMPANY (HECO) NOTES

LOCATION OF HECO FACILITIES

THE LOCATION OF HECO'S OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATIONS OF THE FACILITIES AND SHALL EXERCISE PROPER CARE IN EXCAVATING AND WORKING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES AND UTILITY CROSSINGS ARE SHOWN, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS AND CROSSINGS TO VERIFY THE DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HECO'S FACILITIES WHETHER SHOWN OR NOT SHOWN ON THE PLANS.

2. COMPLIANCE WITH HAWAII OCCUPATIONAL SAFETY AND HEALTH LAWS

THE CONTRACTOR SHALL COMPLY WITH THE STATE OF HAWAII'S OCCUPATIONAL SAFETY AND HEALTH LAWS AND REGULATIONS, INCLUDING WITHOUT LIMITATION, THOSE RELATED TO WORKING ON OR NEAR EXPOSED OR ENERGIZED ELECTRICAL LINES AND EQUIPMENT.

EXCAVATION PERMIT

THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM HECO'S TECHNICAL DIVISION (543-5654) LOCATED AT 820 WARD AVENUE, 4TH FLOOR, TWO WEEKS PRIOR TO STARTING CONSTRUCTION. PLEASE REFER TO OUR REQUEST NUMBER AT THAT TIME.

4. CAUTION!!! ELECTRICAL HAZARD!!!

EXISTING HECO OVERHEAD AND UNDERGROUND LINES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH HECO. ONLY HECO PERSONNEL ARE TO HANDLE THESE ENERGIZED LINES AND ERECT TEMPORARY GUARDS TO PROTECT THESE LINES FROM DAMAGE. THE CONTRACTOR SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS AND DAMAGE TO EXISTING HECO FACILITIES. WHICH CAN RESULT IN ELECTROCUTION.

5. OVERHEAD LINES

STATE LAW (OSHA 1910.269 (k) (28)) REQUIRES THAT A WORKER AND THE LONGEST OBJECT HE OR SHE MAY CONTACT CANNOT COME CLOSER THAN A MINIMUM RADIAL CLEARANCE OF 10 FEET WHEN WORKING CLOSE TO OR UNDER ANY OVERHEAD LINES RATED 50KV AND BELOW. FOR EACH ADDITIONAL 1KV ABOVE 50KV, AN ADDITIONAL 0.4 INCH SHALL BE ADDED TO THE 10- FOOT CLEARANCE REQUIREMENT. THE PRECEDING INFORMATION ON LINE CLEARANCE REQUIREMENTS IS PROVIDED AS A CONVENIENCE AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE INFORMED OF AND COMPLY WITH ANY REVISIONS OR AMENDMENTS TO THE LAW.

SHOULD THE CONTRACTOR ANTICIPATE THAT HIS WORK WILL RESULT IN THE NEED TO ENCROACH WITHIN THE MINIMUM REQUIRED CLEARANCE AT ANY TIME, THE CONTRACTOR SHALL NOTIFY HECO AT LEAST FOUR (4) WEEKS PRIOR TO THE PLANNED ENCROACHMENT SO THAT, IF FEASIBLE, THE NECESSARY PROTECTIONS (E.G. RELOCATE, DE- ENERGIZE, OR BLANKET HECO LINES) CAN BE PUT IN PLACE. HECO'S COST OF SAFEGUARDING ITS LINES WILL BE CHARGED TO THE CONTRACTOR.

CONTACT HECO'S CUSTOMER INSTALLATIONS DEPARTMENT AT 543-7846 FOR ASSISTANCE IN IDENTIFYING AND SAFEGUARDING OVERHEAD POWER LINES.

REFER TO SECTION X OF HECO'S ELECTRIC SERVICE INSTALLATION MANUAL FOR ADDITIONAL GUIDELINES WHEN WORKING AROUND HECO'S FACILITIES. A COPY MAY BE OBTAINED FROM HECO'S CUSTOMER INSTALLATIONS DEPARTMENT.

6. POLE BRACING

A MINIMUM CLEARANCE OF 10 FEET MUST BE MAINTAINED WHEN EXCAVATING AROUND UTILITY POLES AND/OR THEIR ANCHOR SYSTEM TO PREVENT WEAKENING OR POLE SUPPORT FAILURE. SHOULD WORK REQUIRE EXCAVATING WITHIN 10 FEET OF A POLE AND/OR ITS ANCHOR SYSTEM. THE CONTRACTOR SHALL PROTECT, SUPPORT, SECURE, AND TAKE ALL OTHER PRECAUTIONS TO PREVENT DAMAGE TO OR LEANING OF THESE POLES. THE CONTRACTOR IS RESPONSIBLE FOR ALL ASSOCIATED COSTS TO BRACE, REPAIR, OR STRAIGHTEN POLES, ALL MEANS OF STRUCTURAL SUPPORT FOR THE POLE PROPOSED BY THE CONTRACTOR SHALL FIRST BE REVIEWED BY HECO BEFORE IMPLEMENTATION. FOR POLE BRACING INSTRUCTIONS, THE CONTRACTOR SHALL CALL THE HECO CONSTRUCTION AND MAINTENANCE DEPT.. CUSTOMER & SYSTEM SUPERINTENDENT AT 543-4223 A MINIMUM OF TWO (2) WEEKS IN ADVANCE.

7. <u>UNDERGROUND LINES</u>

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND LINES. HECO'S EXISTING ELECTRICAL CABLES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION. ONLY HECO PERSONNEL ARE TO BREAK INTO EXISTING HECO FACILITIES, HANDLE THESE CABLES, AND ERECT TEMPORARY GUARDS TO PROTECT THESE CABLES FROM DAMAGE. THE COST OF HECO'S ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF ITS UNDERGROUND LINES WILL BE CHARGED TO THE CONTRACTOR. SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HECO'S 138KV UNDERGROUND LINES (SEE HECO INSTRUCTIONS TO CONSULTANTS/CONTRACTORS ON "EXCAVATION NEAR HECO'S UNDERGROUND 138KV LINES" FOR DETAILED REQUIREMENTS).

FOR VERIFICATION OF UNDERGROUND LINES, THE CONTRACTOR SHALL CALL HECO'S UNDERGROUND DIVISION AT 543-7049 A MINIMUM OF 72 HOURS IN ADVANCE.

FOR ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF THESE LINES, THE CONTRACTOR SHALL CALL HECO'S CONSTRUCTION & MAINTENANCE DEPT., CUSTOMER & SYSTEM SUPERINTENDENT, AT 543-4223. A MINIMUM OF TWO (2) WEEKS IN ADVANCE.

8. UNDERGROUND FUEL PIPELINES

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF HECO'S UNDERGROUND FUEL OIL PIPELINES. SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HECO'S UNDERGROUND FUEL OIL PIPELINES (SEE HECO INSTRUCTIONS TO CONSULTANTS/CONTRACTORS ON "EXCAVATION NEAR HECO'S UNDERGROUND FUEL PIPELINES" FOR DETAILED REQUIREMENTS).

EXCAVATIONS

WHEN TRENCH EXCAVATION IS ADJACENT TO OR BENEATH HECO'S EXISTING STRUCTURES OR FACILITIES. THE CONTRACTOR IS RESPONSIBLE FOR:

- a) SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE AND TO PREVENT POSSIBLE SLIDES, CAVE-INS, AND SETTLEMENTS
- b) PROPERLY SUPPORTING EXISTING STRUCTURES OR FACILITIES WITH BEAMS, STRUTS, OR UNDER-PINNINGS TO FULLY PROTECT IT FROM DAMAGE
- c) BACKFILLING WITH PROPER BACKFILL MATERIAL INCLUDING SPECIAL THERMAL BACKFILL WHERE EXISTING (REFER TO ENGINEERING DEPARTMENT FOR THERMAL BACKFILL SPECIFICATIONS).

10. RELOCATION OF HECO FACILITIES

ANY WORK REQUIRED TO RELOCATE OR MODIFY HECO FACILITIES SHALL BE DONE BY HECO. OR BY THE CONTRACTOR UNDER HECO'S SUPERVISION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION, AND SHALL PROVIDE NECESSARY SUPPORT FOR HECO'S WORK, WHICH MAY INCLUDE, BUT NOT BE LIMITED TO, EXCAVATION AND BACKFILL. PERMITS AND TRAFFIC CONTROL, BARRICADING, AND RESTORATION OF PAVEMENT, SIDEWALKS, AND OTHER FACILITIES.

ALL COSTS ASSOCIATED WITH ANY RELOCATION OR MODIFICATION (EITHER TEMPORARY OR PERMANENT) FOR THE CONVENIENCE OF THE CONTRACTOR, OR TO ENABLE THE CONTRACTOR TO PERFORM HIS WORK IN A SAFE AND EXPEDITIOUS MANNER IN FULFILLING HIS CONTRACT OBLIGATIONS SHALL BE BORNE BY THE CONTRACTOR.

11. CONFLICTS

ANY REDESIGN OR RELOCATION OF HECO'S FACILITIES NOT SHOWN ON THE PLANS MAY BE CAUSE FOR LENGTHY DELAYS. THE CONTRACTOR ACKNOWLEDGES THAT HECO IS NOT RESPONSIBLE FOR ANY DELAY OR DAMAGE THAT MAY ARISE AS A RESULT OF ANY CONFLICTS DISCOVERED OR IDENTIFIED WITH RESPECT TO THE LOCATION OR CONSTRUCTION OF HECO'S ELECTRICAL FACILITIES IN THE FIELD, REGARDLESS OF WHETHER THE CONTRACTOR HAS MET THE REQUESTED MINIMUM ADVANCE NOTICES. IN ORDER TO MINIMIZE ANY DELAY OR IMPACT ARISING FROM SUCH CONFLICTS, HECO SHOULD BE NOTIFIED IMMEDIATELY UPON DISCOVERY OR IDENTIFICATION OF SUCH CONFLICT.

12. DAMAGE TO HECO FACILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL HECO SURFACE AND SUBSURFACE UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HECO'S FACILITIES AS A RESULT OF HIS OPERATIONS. THE CONTRACTOR SHALL IMMEDIATELY REPORT SUCH DAMAGES TO HECO'S TROUBLE DISPATCHER AT 548-7961. REPAIR WORK SHALL BE DONE BY HECO OR BY THE CONTRACTOR UNDER HECO'S SUPERVISION COSTS FOR DAMAGES TO HECO'S FACILITIES SHALL BE BORNE BY THE CONTRACTOR.

IN CASE OF DAMAGE OR SUSPECTED DAMAGE TO HECO'S FUEL PIPELINE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY HECO'S HONOLULU POWER PLANT SHIFT SUPERVISOR AT 533-2102 (A 24-HOUR NUMBER) SO HECO PERSONNEL CAN SECURE THE DAMAGED SECTION AND REPORT ANY OIL SPILLS TO THE PROPER AUTHORITIES. ALL COSTS ASSOCIATED WITH THE DAMAGE, REPAIR, AND OIL SPILL CLEANUP SHALL BE BORNE BY THE CONTRACTOR.

13. HECO STAND-BY PERSONNEL

THE CONTRACTOR MAY REQUEST HECO TO PROVIDE AN INSPECTOR TO STAND-BY DURING CONSTRUCTION NEAR HECO'S FACILITIES. THE COST OF SUCH INSPECTION WILL BE CHARGED TO THE CONTRACTOR.

THE CONTRACTOR SHALL CALL THE HECO CONSTRUCTION AND MAINTENANCE DEPT., CUSTOMER & SYSTEM SUPERINTENDENT AT 543-4223 A MINIMUM OF 5 WORKING DAYS IN ADVANCE TO ARRANGE FOR HECO STAND-BY PERSONNEL

14. <u>CLEARANCES</u>

THE FOLLOWING CLEARANCES SHALL BE MAINTAINED BETWEEN HECO'S DUCTLINE AND ALL ADJACENT STRUCTURES (CHARTED AND UNCHARTED) IN THE TRENCH:

STRUCTURE TYPE	MINIMUM CLEARANCE(INCHES)
WATER LINES, PARALLEL	36 (A)
WATER LINES, CROSSING	12 (B)
SEWER LINES, PARALLEL	36 (C)
SEWER LINES, CROSSING	24 (D)
DRAIN LINES, PARALLEL	12
DRAIN LINES, CROSSING	6 (E)
ELECTRICAL AND GAS LINES, PARALLEL	12
ELECTRICAL AND GAS LINES, CROSSING	12
TELEPHONE LINES, PARALLEL	6 (E)
TELEPHONE LINES, CROSSING	6 (E)
CHEVRON OIL LINES, PARALLEL	36
CHEVRON OIL LINES, CROSSING	48 BELOW OIL LINE (F)

- A. THE MINIMUM HORIZONTAL CLEARANCES TO WATER LINES PARALLEL TO ELECTRICAL DUCTLINES MUST BE INCREASED TO 60 INCHES IF THE WATER LINE IS GREATER THAN 16 INCHES IN DIAMETER
- B. THE MINIMUM VERTICAL CLEARANCES TO WATER LINES CROSSING ELECTRICAL DUCTLINES CAN BE REDUCED TO 6 INCHES IF THE ELECTRICAL DUCTLINE STRUCTURE IS CONCRETE ENCASED AND IS BELOW THE WATER LINE AND THE WATER LINE IS LESS THAN 16 INCHES IN DIAMETER.
- C. A MINIMUM HORIZONTAL CLERANCE OF 36 INCHES IS REQUIRED BETWEEN NEW HANDHOLES AND EXISTING SEWER LATERALS.
- D. THE MINIMUM VERTICAL CLEARANCES TO SEWER PIPES CROSSING ELECTRICAL DUCTLINES CAN BE REDUCED TO 12 INCHES IF THE SEWER PIPE IS JACKETED IN CONCRETE.
- E. THE MINIMUM CLEARANCES SHALL BE INCREASED TO 12 INCHES IF THE ELECTRICAL DUCTLINE IS DIRECT BURIED.
- F. THE MINIMUM VERTICAL CLEARANCES TO OIL LINES CROSSING ELECTRICAL DUCTLINES CAN BE REDUCED TO 24 INCHES BELOW OIL LINES IF THE CROSSINGS ARE ENCASED IN 6 INCHES OF CONCRETE.
- G. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER & HECO OF ANY HEAT SOURCES (POWER CABLE DUCT BANK, STEAMLINE, ETC.) ENCOUNTERED THAT ARE NOT PROPERLY IDENTIFIED ON THE DRAWING.

THE FOLLOWING CLEARANCE SHALL BE MAINTAINED BETWEEN HECO'S FUEL OIL PIPELINES AND ALL ADJACENT STRUCTURES: 24-INCHES, PARALLEL OR CROSSING. THE MINIMUM CLEARANCE CAN BE REDUCED TO 12 INCHEL (PARALLEL AND BELOW ONLY) IF THE STRUCTURE IS JACKETED IN CONCRETE.

15. <u>INDEMNITY</u>

THE CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS HECO FROM AND AGAINST ALL LOSSES, DAMAGES, CLAIMS, AND ACTIONS, INCLUDING BUT NOT LIMITED TO REASONABLE ATTORNEY'S FEES AND COSTS BASED UPON OR ARISING OUT OF DAMAGE TO PROPERTY OR INJURIES TO PERSONS, OR OTHER TORTIOUS ACTS CAUSED OR CONTRIBUTED TO BY CONTRACTOR OR ANYONE ACTING UNDER ITS DIRECTION OR CONTROL OR ON ITS BEHALF; PROVIDED CONTRACTOR'S INDEMNITY SHALL NOT BE APPLICABLE TO ANY LIABILITY BASED UPON THE SOLE NEGLIGENCE OF HECO.

16. <u>SCHEDULE</u>

CONTRACTOR SHALL FURNISH HIS CONSTRUCTION SCHEDULE ___ WORKING DAYS PRIOR TO STARTING WORK ON HECO FACILITIES. CONTRACTOR SHALL GIVE HECO, IN WRITING ___ WORKING DAYS NOTICE TO PROCEED WITH HECO'S PORTION OF WORK.

17. AUTHORITY

ALL CONSTRUCTION, RESTORATION WORK, AND INSPECTION SHALL BE SUBJECT TO WHICHEVER GOVERNMENTAL AGENCY HAS AUTHORITY OVER THE WORK.

18. SPECIFICATIONS

CONSTRUCTION OF HECO'S UNDERGROUND FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISIONS OF HECO SPECIFICATIONS CS7001, CS7003, CS7202, CS9301, AND CS9401 AND APPLICABLE HECO STANDARDS.

19. CONSTRUCTION

CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES TO PROPERLY PERFORM AND FULLY COMPLETE ALL WORK SHOWN ON THE CONTRACT, DRAWINGS. AND SPECIFICATIONS. ALL MATERIALS SHALL BE NEW AND MANUFACTURED IN THE UNITED STATES OF AMERICA. ALL MANHOLE, HANDHOLE, AND DUCTLINE INSTALLATIONS SHALL BE INSPECTED AND APPROVED BY HECO PRIOR TO EXCAVATION AND PRIOR TO PLACING CONCRETE. CONTRACTOR SHALL NOTIFY HECO'S INSPECTION DIVISION AT 543-4356 AT LEAST 48 HOURS PRIOR TO PLACING CONCRETE.

CONTRACTOR TO COORDINATE WORK TO BREAK INTO HECO'S EXISTING ELECTRICAL FACILITIES WITH HECO'S UNDERGROUND DIVISION AT 543-7871 AT LEAST 10 WORKING DAYS IN ADVANCE.

20. STAKEOUT

THE CONTRACTOR SHALL ARRANGE FOR TONEOUTS OF ALL UNDERGROUND FACILITIES AND SHALL STAKEOUT ALL PROPOSED HECO FACILITIES WITHIN THE PROJECT AREA SO AS TO NOT CONFLICT WITH ANY UTILITY (EXISTING OR PROPOSED) AND ANY PROPOSED CONSTRUCTION OR IMPROVEMENT WORK FOR VERIFICATION BY HECO BEFORE PROCEEDING WITH HECO WORK.

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Customer Installations Department Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

21. <u>DUCTLINES</u>

ALL DUCTLINE INSTALLATIONS SHALL BE PVC SCHEDULE 40 ENCASED IN CONCRETE, UNLESS OTHERWISE NOTED. ALL COMPLETED DUCTLINES SHALL BE MANDREL TESTED BY THE CONTRACTOR IN THE PRESENCE OF HECO'S INSPECTOR USING HECO'S STANDARD PRACTICE. THE CONTRACTOR SHALL INSTALL A 1/8" POLYOLEFIN PULL LINE IN ALL COMPLETED DUCTLINES AFTER MANDREL TESTING IS COMPLETE.

22. JOINT POLE REMOVAL

THE LAST JOINT POLE OCCUPANT OFF THE POLES SHALL REMOVE THE POLES.

23. AS-BUILT PLANS

THE CONTRACTOR SHALL PROVIDE HECO WITH TWO SETS OF AS-BUILT REPRODUCIBLE TRACINGS SHOWING THE OFFSETS, STATIONING, AND VERTICAL ELEVATION OF THE DUCT LINE(S) CONSTRUCTED.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/

% e	Community Planning and Engineering Deelgn Construction Management 1100 Alakea Street, Sbth Floor	_
1	EAST KAPOLEI II DEVELOPI EAST-WEST ROAD AND RO HONOULIULI, EWA, OAHU, HA (DPP SUBD. FILE NO. 2008/SUB-21 OWNER: DEPARTMENT OF LAND AND NATURAL DEVELOPER: DEPARTMENT OF HAWAIIAN HOM TAX MAP KEY: 9-1-17: Portions 71 an	OAD "E" AWAII) RESOURCES E LANDS
	HECO NOTES	

DESCRIPTION

REVISION DATE

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DRAWN BY:	ENGINEER: GF	CHECKED BY: GF
APPROVED:		.,,,
HAWAIIAN ELECTRIC CO.	DATE	D/

DWG. NO. **E-3** SHEET 44 OF 94 SHEETS

SANDWICH ISLES COMMUNICATIONS' NOTES

GENERAL

- 1. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH SPECIFICATIONS AND REQUIREMENTS OF SANDWICH ISLES COMMUNICATIONS (SIC), WHICH COMPLIES WITH ALL APPLICABLE COUNTY AND STATE REQUIREMENTS.
- 2. ALL MATERIALS USED ON SIC PORTION OF THE PROJECT MUST BE LISTED ON THE RURAL UTILITIES SERVICE (RUS), UNITED STATES DEPARTMENT OF AGRICULTURE LIST OF APPROVED MATERIALS.
- 3. ALL PVC CONDUITS, SWEEPS, COUPLINGS, ADAPTERS AND BELL ENDS SHALL BE SCHEDULE 40. UNLESS OTHERWISE SPECIFIED.
- 4. ALL HIGH DENSITY POLYETHYLENE CONDUITS SHALL BE SDR 11. TYPICAL 3-PACK UNIT INCLUDES TWO 1-1/2" SDR 11 RATED CONDUITS IN COLORS OF ORANGE AND RED: AND ONE 1-1/2" TONEABLE HDPE DUCT (CONTRACTOR IS REQUIRED TO CONFIRM CONTINUITY ON THE TONEABLE HDPE DUCT FROM MANHOLE TO MANHOLE), BLACK IN COLOR, UNLESS OTHERWISE SPECIFIED. ALL CONDUITS TO BE PRESSURE TESTED AT 120 PSI. AFTER THE CONDUITS ARE INSTALLED, A ROUND SOLID TEST MANDREL HAVING A DIAMETER OF ONE FOURTH-INCH LESS THAN THE INSIDE DIAMETER OF THE CONDUIT SHALL BE PULLED THROUGH EACH CONDUIT. SUFFIXES LISTED IN RUS SPEC 515B FOR CONDUITS ARE APPLICABLE. FUSION SPLICING OF THE CONDUIT SHALL BE ACCEPTABLE ONLY WHEN PULLING JOINTS THROUGH BORES. ALL COUPLINGS SHALL BE DOUBLE "E-LOC" MANUFACTURED BY ETOC SPECIALTY PRODUCTS, INC.
- MAIN CONDUIT RUNS EXCEPT RISER CONDUITS AND CROSS CONNECT PEDESTAL CONDUITS SHALL BE CONSTRUCTED WITH MINIMUM 6-FOOT RADIUS CURVES, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

CONDUITS

- 1. INSTALL MULETAPE IN ALL CONDUITS DESIGNATED FOR COPPER CABLE AND CAP ALL CONDUITS AFTER TESTING. THE NEPTCO (OR APPROVED EQUAL) MULETAPE IS AVAILABLE IN 3000 FT., 6500 FT., AND 10,000 FT. REELS FROM WESTINGHOUSE ELECTRIC SUPPLY COMPANY (WESCO), THE NEPTCO MULETAPE IS PRELUBRICATED AND PRINTED WITH SÉQUENTIAL FOOTAGE MARKINGS. MULETAPE WILL NOT BE INSTALLED IN CONDUITS DESIGNATED FOR FIBER.
- 2. ALL DUCTS SHALL HAVE TEMPORARY WATERTIGHT PLUGS OR SEALS TO KEEP THEM FREE OF MOISTURE AND DEBRIS (JACKMOON PLUG OR EQUIVALENT). DUCT TAPE IS UNACCEPTABLE.
- 3. WHEN INSTALLING THE TONEABLE HDPE DUCT IT SHALL BE NECESSARY TO PULL THE CONDUIT APPROXIMATELY FIVE (5) FEET INSIDE OF THE MANHOLE. PEEL BACK THE LOCATOR WIRE THE ENTIRE FIVE (5) FEET, TURN AND "J" HOOK IT TO THE INSIDE WALL. AT THE END OF THE LOCATOR WIRE, IT SHALL BE NECESSARY TO LEAVE A ONE (1) INCH LOOP TO ATTACH THE LOCATOR EQUIPMENT. CUT THE DUCT 18" FROM THE INSIDE WALL OF THE MANHOLE. THIS EXCESS DUCT. LABOR AND MATERIALS SHALL BE COMPENSATED UNDER THE UM UNIT.
- 4. STUBOUT CONDUITS FROM HANDHOLES TO INDIVIDUAL RESIDENTIAL LOTS SHALL BE SCHEDULE 40 PVC, 1" DIAMETER AND EXTENDED 5' BEYOND PROPERTY LINE. CAP AND SEAL END AND MARK LOCATIONS WITH ABOVE GROUND MARKER.
- 5. ALL CONDUITS SHALL ENTER HANDHOLES AT 90 DEGREE ANGLE AND SHALL EXTEND INTO MANHOLE AS FOLLOWS: (A) BLACK CONDUIT: 18". (B) ALL OTHERS: 12". ANY EXCEPTIONS SHALL ONLY BE PERMITTED WHEN SPECIFIED BY THE ENGINEER.
- 6. ALL CONDUITS ENTERING MANHOLES OR HANDHOLES SHALL BE GROUTED BETWEEN CONDUITS AND SIDEWALL, INSIDE AND OUT. ALL CONDUITS WILL ENTER THE MANHOLES AND HANDHOLES ON THE PROPERTY SIDE AT ALL TIMES UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
- 7. BACKFILL AND COMPACTION FOR DUCTLINE TRENCHES, MANHOLES AND HANDHOLES SHALL BE IN ACCORDANCE WITH:
 - A. STATE HIGHWAY DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION WITH LATEST AMENDMENTS. IF CONSTRUCTION IS LOCATED UNDER A STATE STREET OR ROAD. OR LOCATED IN PRIVATE PROPERTY.
 - B. THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND PUBLIC WORKS CONSTRUCTION, DATED 1986, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, WITH LATEST AMENDMENTS: COUNTY OF KAUAI, MAUI, OR HAWAII, AS THE CASE MAY BE. IF CONSTRUCTION IS LOCATED UNDER COUNTY STREETS AND ROADS.
- 8. BACKFILLING SHALL BE SUBJECT TO THE APPROVAL OF THE SIC INSPECTOR, THE AUTHORIZED REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION, STATE OF HAWAII AND/OR DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, COUNTY OF KAUAI. MAUI OR HAWAII, AS THE CASE MAY BE.

- 9. EXCAVATED MATERIAL MAY BE REUSED AS BACKFILL, PROVIDING THAT IT CONFORMS TO REQUIREMENTS OF TYPE "A" AND TYPE "B" BACKFILL, AS REQUIRED WITHIN THE STANDARD SPECIFICATIONS. A WRITTEN SOILS REPORT OF CONFORMANCE BY A LICENSED THIRD PARTY GEOTECHNICAL ENGINEER IS NEEDED PRIOR TO BACKFILL USING THE EXCAVATED MATERIAL.
 - A. TYPE "A" BACKFILL IS DEFINED AS BEACH SAND, EARTH OR EARTH AND GRAVEL. MAXIMUM PARTICLE SIZE SHALL BE 1" AND MIXTURE SHALL NOT CONTAIN MORE THEN 20% BY VOLUME OF ROCK PARTICLES.
 - B. TYPE "B" BACKFILL IS DEFINED AS BEACH SAND, EARTH OR EARTH AND GRAVEL. MAXIMUM PARTICLE SIZE SHALL BE 1/2" AND MIXTURE SHALL NOT CONTAIN MORE THEN 20% BY VOLUME OF ROCK PARTICLES.
- 10. ALL CONDUIT RUNS SHALL HAVE A NON-METALLIC WARNING TAPE PLACED 12 INCHES ABOVE THE CONDUIT RUN. THE TAPE SHOULD READ "CAUTION BURIED TELEPHONE CABLE BELOW".

MANHOLES AND HANDHOLES:

- 1. ALL MANHOLES SHALL HAVE HS20-44 TRAFFIC LOADING COVERS (UNLESS OTHERWISE NOTED). HANDHOLES SHALL HAVE 20K TRAFFIC LOAD RATED COVER.
- 2. ALL MANHOLE AND HANDHOLE COVERS SHALL HAVE COVER LOGO TO READ "SIC".
- 3. ALL HANDHOLE AND MANHOLE COVER BOLTS SHALL BE STAINLESS STEEL 3/4" PENTAHEAD, UNLESS OTHERWISE NOTED.
- 4. ALL MANHOLES AND HANDHOLES ARE SPECIFIED AS FOLLOWS:
 - A. UM35 AND UM4X6 MANHOLE ASSEMBLY UNITS HAWAII PRECAST. INC. AS PER MASTER PURCHASE AGREEMENT.
 - B. UHC 30X48X36 HANDHOLE (PULLBOX) ASSEMBLY UNIT. THIS UNIT SHALL CONSIST OF ONE ARMORCAST POLYMER CONCRETE BOX & COVER ASSEMBLY. PART NUMBER (A6001430TA-SIC2) OR EQUIVALENT.
 - C. UHC 13X24X36 HANDHOLE (PULLBOX) ASSEMBLY UNIT. THIS UNIT SHALL CONSIST OF ONE ARMORCAST POLYMER CONCRETE BOX & COVER ASSEMBLY. PART NUMBER (A6001946TA-SIC2) OR EQUIVALENT.
 - D. UH35 AND UH4X6 HANDHOLE ASSEMBLY UNIT HAWA'I PRECAST. INC. AS PER MASTER PURCHASE AGREEMENT.
- 5. PROVIDE A 5/8-INCH DIAMETER X 8-FEET COPPER CLAD GROUND ROD AT ALL HANDHOLES AND MANHOLES, UNLESS OTHERWISE SPECIFIED.
- 6. ALL MANHOLES AND HANDHOLES TO BE ORDERED WITH ALL HARDWARE, INCLUDING CABLE RACKS, STEPS AND PEGS.
- 7. THE TOPS OF ALL MANHOLES AND HANDHOLES SHALL BE FLUSH TO GRADE WITH THE SIDEWALK OR ROADWAY, UNLESS OTHERWISE NOTED.
- 8. SET MANHOLE OR HANDHOLE ON A LEVEL AREA. IN THE BOTTOM OF THE EXCAVATION. ON A 4" LAYER OF CRUSHED ROCK. FOR DRAINAGE PURPOSES.
- BEFORE BACKFILLING AND COMPACTING, MAKE SURE COVERS ARE IN PLACE AND SECURE. LAYER 6" TO 8" OF BACKFILL MATERIAL AROUND THE MANHOLE OR HANDHOLE. TAMP EACH INDIVIDUAL LAYER OF BACKFILL MATERIAL. CONTINUE THE LAYERING AND "TAMPING" UNTIL FINAL GRADE IS ACHIEVED.
- 10. THE BASE OF ALL MANHOLES AND HANDHOLES WILL BE PLACED LEVEL. SOME MANHOLES HAVE ADJUSTABLE FRAMES. ALL VOIDS CREATED DURING INSTALLATION MUST BE FILLED WITH MORTAR MIX OR CONCRETE. THIS IS ESPECIALLY TRUE FOR MANHOLES AND HANDHOLES SET IN ROADWAYS.

OCEANIC TIME WARNER CABLE NOTES

- 1. THE LOCATION OF CATV FACILITIES ARE BASICALLY WITHIN EXISTING CATV CONDUITS. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN CLOSE PROXIMITY OF CATV FACILITIES.
- 2. THE CONTRACTOR SHALL OBTAIN EXCAVATION PERMIT CLEARANCE FROM OCEANIC TIME WARNER CABLE'S ENGINEERING SECTION LOCATED AT 200 AKAMAINUI ST.. MILILANI TECH. PARK. PHONE 625-8443.
- 3. ANY WORK REQUIRED TO RELOCATE CATV FACILITIES SHALL BE DONE BY OCEANIC TIME WARNER CABLE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION REQUIREMENTS AND ASSOCIATED APPLICABLE COSTS.
- 4. ANY DAMAGE TO CATV FACILITIES SHALL BE REPORTED IMMEDIATELY TO OCEANIC TIME WARNER CABLE'S REPAIR DISPATCH DEPARTMENT AT 625-8437.
- 5. CONTACT OCEANIC TIME WARNER CABLE INSPECTOR 72 HOURS PRIOR TO STARTING WORK ON CATV INFRASTRUCTURE. CALL MOKI PLACE AT 625-8378.
- 6. ALL CONDUITS SHALL ENTER THROUGH THE END OF THE PULLBOX AT 90 DEGREES TO THE WALL OF PULLBOX.
- 7. ALL ENTRANCES INTO THE PULLBOX SHALL BE GROUTED AROUND THE CONDUITS AND THE INSIDE SURFACES SHALL BE SMOOTH AND FLUSH WITH THE EXISTING WALL.
- 8. ALL 4" CONDUITS SHALL HAVE MULETAPE AND ALL OTHER SIZE CONDUITS SHALL HAVE PULLSTRING.
- 9. END BELS ARE REQUIRED ON ALL 4" AND 2" CONDUITS.
- 10. AFTER DUCTLINE HAS BEEN COMPLETED, A MANDREL NOT LESS THAN 12" LONG AND HAVING A DIAMETER OF 1/4" LESS THAN THE INSIDE DIAMETER OF DUCT SHALL BE PULLED THROUGH EACH DUCT.

HAWAIIAN ELECTRIC COMPANY NOTES

- 1. ALL HECO PRIMARY DUCTS SHALL BYPASS ALL HECO PULLBOXES 2' X 4' AND SMALLER.
- 2. 2" DUCTS FOR HECO SINGLE PHASE PRIMARY SHOULD BYPASS HECO MH'S USED FOR MAINS. WHEN FEASIBLE.
- 3. IF HECO EQUIPMENT IS LOCATED NEAR SLOPING TERRAIN, THE CONTRACTOR MAY BE REQUIRED TO CONSTRUCT RETAINING WALLS PER HECO STANDARD NO. 30-5002.

TRAFFIC SIGNALS & TECHNOLOGY NOTES:

APPROVED BY:

CHIEF. TRAFFIC SIGNALS AND TECHNOLOGY

CITY AND COUNTY OF HONOLULU

CHIEF, TRAFFIC REVIEW BRANCH

DEPARTMENT OF TRANSPORTATION SERVICES

DEPARTMENT OF PLANNING AND PERMITTING

- 1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION". SEPTEMBER, 1986, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, EXCEPT AS MODIFIED HEREIN OR IN THE SPECIAL PROVISIONS.
- 2. THE CONTRACTOR SHALL VERIFY WITH THE RESPECTIVE UTILITY COMPANIES AND GOVERNMENT AGENCIES, THE LOCATIONS OF ALL ELECTRIC. TELEPHONE. TRAFFIC SIGNAL, STREET LIGHT, FIRE ALARM, GAS, WATER, SEWER, DRAIN, AND OTHER LINES CROSSING THE EXCAVATION PATH OR IN EXCAVATION AREAS.
- 3. LOCATIONS OF TRAFFIC SIGNAL CONDUITS SHALL BE STAKED OUT BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO ANY EXCAVATION.
- 4. ALL STRUCTURES, PAVEMENTS, UTILITIES, LANDSCAPING, AND OTHER TOPOGRAPHICAL FEATURES SHOWN ON THE INTERSECTION DRAWINGS ARE EXISTING AND ARE TO REMAIN UNLESS NOTED OR INDICATED OTHERWISE.
- 5. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITY COMPANIES AND GOVERNMENT AGENCIES OF THEIR INTENT TO BEGIN CONSTRUCTION ON ANY INTERSECTION OR STREET AT LEAST TWO (2) WEEKS PRIOR TO THE START OF SUCH CONSTRUCTION
- 6. THE CONTRACTOR MAY CLOSE ONLY ONE LANE OF TRAFFIC AT A TIME FOR ANY REASON. DURING THE PEAK TRAFFIC PERIODS FROM 6:00 TO 9:00 A.M. AND FROM 3:00 TO 6:00 P.M.. MONDAY THROUGH FRIDAY. ALL LANES SHALL BE KEPT OPEN AND MAINTAINED AT ALL TIMES.
- 7. THE CONTRACTOR SHALL NOTIFY THE TRAFFIC CONTROL BRANCH, DEPARTMENT OF TRANSPORTATION SERVICES. THREE (3) WORKING DAYS PRIOR TO COMMENCING WORK ON THE TRAFFIC SIGNAL SYSTEM (PHONE: 768-8388).

7/16/09

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE EXISTING TRAFFIC SIGNAL FACILITIES, INCLUDING THE TRAFFIC SIGNAL INTERCONNECTING SYSTEM. ANY AND ALL DAMAGES TO THESE FACILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS COST IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY AND COUNTY OF HONOLULU.

000 -	Community Planning	and Eng	ineering. Inc.
y ce	-	_	Infrastructure Plenning Honokulu, Hawasi
	EAST KAPOLEI II D EAST-WEST ROAD		
	HONOULIULI, EWA, (DPP SUBD. FILE NO.	OAHU, HAW	
	OWNER: DEPARTMENT OF LAND AN DEVELOPER: DEPARTMENT OF H TAX MAP KEY: 9-1-17: PO	ND NATURAL REI IAWAIIAN HOME I	LANDS
	CO, SIC, DTS & C		NOTES

ENGINEER: GF

DATE : OCEANIC TIME WARNER CABLE

CHECKED BY: GF

DRAWN BY:

APPROVED:

AWAIIAN ELECTRIC CO

SANDWICH (SLES COMMUNICATIONS, INC. DATE

LICENSED

PROFESSIONAL ENGINEER No. 4195-E

9day 2009

THIS WORK WAS PREPARED BY

ME OR UNDER MY SUPERVISION.

CONSTRUCTION OF THIS PROJECT

WILL BE UNDER MY OBSERVATION LICENSE EXPIRATION DATE: 04/30/

EQUIPMENT SCHEDULE

THE HAWAIIAN ELECTRIC Co. (HECO), SANDWICH ISLES COMMUNICATIONS, INC. (SIC), COMMUNITY ANTENNA TELEVISION & STREET LIGHTING PULLBOXES, HANDHOLE, TRANS-FORMER PAD LOTS & SWITCHING EQUIPMENT PAD LOTS SHALL BE CONSTRUCTED BY THE CONTRACTOR AS SHOWN IN THESE DRAWINGS & IN ACCORDANCE WITH THE FOLLOWING STANDARD DRAWINGS:

WITH THE FOLLOWI	NG STANDARD DRAWINGS:		
TYPE	DESCRIPTION	TYPE	<u>DESCRIPTION</u>
2' X 4' HECO PULLBOX	2' X 4' PRECAST CONCRETE PULLBOX WITH PRECAST CONCRETE COVER, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 30-2005.	19" X 28" ST. LT. PULLBOX (CITY & COUNTY)	19" X 28" TYPE "SLD-1" PRECAST CONCRETE PULLBOX WITH CAST IRON FRAME AND COVER, PROVIDED IN ACCORDANCE WITH C&C OF HONOLULU DEPARTMENT OF TRANSPORTATION SERVICES STANDARD DRAWINGS.
3' X 5' HECO HANDHOLE	3' X 5' PRECAST CONCRETE HANDHOLE WITH PRECAST CONCRETE COVER, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 101020.	2' X 4' ST. LT. PULLBOX (CITY & COUNTY)	2' X 4' TYPE 435TB PRECAST CONCRETE PULLBOX WITH POLYMER CONCRETE COVERS, PROVIDED IN ACCORDANCE WITH HTCO. STANDARD DRAWING NO. 34056, EXCEPT
4' X 6' HECO HANDHOLE	4'-0" X 6'-0" REINFORCED CONCRETE HANDHOLE WITH PRECAST CONCRETE COVERS, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 101024.		WITH "C&C ST. LT." INSCRIBED ON COVERS. A MINIMUM OF 2 PRE—CAST CONCRETE PULLBOX SECTIONS SHALL BE REQUIRED AT EACH PULLBOX.
5' X 8' HECO HANDHOLE	5'-0" X 8'-0" REINFORCED CONCRETE HANDHOLE WITH PRECAST CONCRETE COVERS, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 100907.	6' X 7' HECO TRANSFORMER PAD LOT	6' X 7' TRANSFORMER PAD LOT WITH REIN- FORCED CONCRETE TRANSFORMER PAD AND GROUND ROD PER HECO STANDARD DRAWING NOS. 30-5001 & 011249.
6' X 11' HECO MANHOLE	6-0" X 11'-0" REINFORCED CONCRETE MANHOLE WITH TRAFFIC RATED FRAME AND COVER, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 100726.	10' X 14' HECO AUTOMATIC SWITCHING EQUPMENT PAD LOT	10'-0" X 14'-0" AUTOMATIC TRANSFER SWITCHING EQUIPMENT ENCLOSURE PAD LOT WITH REINFORCED CONCRETE CABLE TROUGH, PER HECO STANDARD DRAWING NO. 30-5040.
6' X 14' HECO MANHOLE	6'-0" X 14'-0" REINFORCED CONCRETE MANHOLE WITH CAST IRON FRAME AND COVER, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 100912.	TYPE "A" TRAFFIC SIGNAL PULLBOX (CITY & COUNTY)	TYPE "A" PRECAST CONCRETE PULLBOX WITH POLYMER COVER, PROVIDED IN ACCORDANCE WITH C & C OF HONOLULU DEPARTMENT OF TRANSPORTATION SERVICES STANDARD DRAWINGS.
7' X 16' HECO MANHOLE	7' X 16' REINFORCED CONCRETE MANHOLE WITH TRAFFIC RATED FRAME AND COVER, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 100922.	TYPE "B" TRAFFIC SIGNAL PULLBOX (CITY & COUNTY)	TYPE "B" PRECAST CONCRETE PULLBOX WITH POLYMER COVERS, PROVIDED IN ACCORDANCE WITH C & C OF HONOLULU DEPARTMENT OF TRANSPORTATION SERVICES STANDARD DRAWINGS.
3' X 5' COMMUNICATION HANDHOLE	3'-9" X 5'-9" X 3'-10 ¹ / ₂ " POLYMER CONCRETE HANDHOLE WITH TWO PIECE HINGED NON-SKID SURFACE POLYMER CONCRETE 20K "TRAFFIC" RATED COVERS, "SIC" INSCRIBED ON COVERS. PROVIDED IN ACCORDANCE WITH SANDWICH ISLES	TYPE "C" TRAFFIC SIGNAL PULLBOX (CITY & COUNTY)	TYPE "C" PRECAST CONCRETE PULLBOX WITH POLYMER COVERS, PROVIDED IN ACCORDANCE WITH C & C OF HONOLULU DEPARTMENT OF TRANSPORTATION SERVICES STANDARD DRAWINGS.
4' X 6' COMMUNICATION HANDHOLE	COMMUNICATIONS REQUIREMENTS, TYPE UH3x5. 4'-0" X 6'-0" X 6'-1/4" REINFORCED CONCRETE HANDHOLE WITH NON-SKID SURFACE POLYMER CONCRETE 20K "TRAFFIC" RATED COVERS, "SIC"	2'X 4'SECONDARY POWER PULLBOX	2' X 4' PRECAST CONCRETE PULLBOX WITH PRECAST CONCRETE COVER. SIMILAR TO HECO TYPE WITH "ELECTRIC" INSCRIBED ON COVER.
	INSCRIBED ON COVERS. PROVIDED IN ACCORDANCE WITH SANDWICH ISLES COMMUNICATIONS REQUIREMENTS, TYPE UH-4 X 6. VERIFY DEPTH OF HANDHOLE.	·2' X 4' CATV PULLBOX	2'-0" X 4'-0" PRECAST CONCRETE PULLBOX WITH TWO PIECE CHECKERED STEEL PLATE COVERS, SIMILAR TO HTCO 2' X 4' PULLBOX, HTCO DRAWING NO. 34056, EXCEPT WITH "CATV" INSCRIBED ON COVER.
		2' X 6' CATV PULLBOX	2'-0" X 6'-0" PRECAST CONCRETE PULLBOX WITH THREE PIECE POLYMER CONCRETE "SLIP-NOT" COVERS SIMILAR TO HTCO 2' X 6' PULLBOX, HTCO DRAWING NO. 34078, EXCEPT WITH "CATV" INSCRIBED ON COVER. 3 PRECAST CONCRETE PULLBOX SECTIONS SHALL BE REQUIRED AT EACH PULLBOX. PROVIDE ADDITIONAL BASE IF MORE THAN 2-4" CONDUITS ENTER THE "SHORT" END.
		3' X 5' CATV HANDHOLE	3'-0" X 5'-0" REINFORCED PLASTIC HANDHOLE WITH TWO- PIECE "NON-SLIP" POLYMER "PARKWAY" RATED COVERS, SIDE ENTRY KNOCKOUTS, GROUND ROD, SIMILAR TO HTCO DRAWING NO. 34110 FOR AREAS NOT SUBJECT TO TRAFFIC, EXCEPT WITH "CATY" INSCRIBED ON COVER

EXCEPT WITH "CATV" INSCRIBED ON COVER.

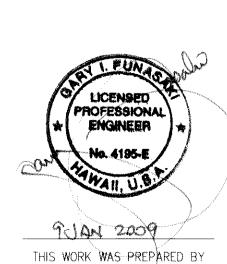
	CONDUIT	SCH	IEDULE
ITEM	DESCRIPTION	ITEM	DESCRIPTION
(2E)	HECO 2" CONDUIT	(4 V)	CATV 4" CONDUIT
(2-2E)	HECO 2-2" CONDUITS	(2-4V)	CATV 2-4" CONDUITS
(3-2E)	HECO 3-2" CONDUITS	(2VS)	CATV 2" SECONDARY POWER CONDUIT
(6-2E)	HECO 6-2" CONDUITS		
(3E)	HECO 3" CONDUIT	(2S)	TRAFFIC SIGNAL 2" CONDUIT
(2-4E)	HECO 2-4" CONDUITS	(2-25)	TRAFFIC SIGNAL 2-2" CONDUITS
(4-4E)	HECO 4-4" CONDUITS	4-25)	TRAFFIC SIGNAL 4-2" CONDUITS
(2-5E)	HECO 2-5" CONDUITS	(5-25)	TRAFFIC SIGNAL 5-2" CONDUITS
(4-5E)	HECO 4-5" CONDUITS	(6-25)	TRAFFIC SIGNAL 6-2" CONDUITS
(6-5E)	HECO 6-5" CONDUITS	(2-35)	TRAFFIC SIGNAL 2-3" CONDUITS
(8-5E)	HECO 8-5" CONDUITS		
(4C)	SANDWICH ISLES COMM UD(1x1-4")		
(2- 4 C)	SANDWICH ISLES COMM UD(1x2-4")	(2P)	SECONDARY ELEC. 2" CONDUIT
(3-4C)	SANDWICH ISLES COMM UD(3x1-4")	(2-2P)	SECONDARY ELEC. 2-2" CONDUITS
(4-4C)	SANDWICH ISLES COMM UD(2x2-4")	(3P)	SECONDARY ELEC. 3" CONDUIT
(6-4C)	SANDWICH ISLES COMM UD(3x2-4")		
(1x3C)	SANDWICH ISLES COMM UD(1x3) $3-1\frac{1}{2}$ "C DUCT PACK		
(1/4)	STREET LIGHT $1\frac{1}{4}$ " CONDUIT WITH WIRING		
(11/21)	STREET LIGHT $1\frac{1}{2}$ " CONDUIT WITH WIRING		
(2L)	STREET LIGHT 2" CONDUIT WITH WIRING		
(3L)	STREET LIGHT 3" CONDUIT WITH WIRING		
(2-21)	STREET LIGHT 2-2" CONDUITS WITH WIRING		
(3-21)	STREET LIGHT 3-2" CONDUITS WITH WIRING		
4-21	STREET LIGHT 4-2" CONDUITS WITH WIRING		
(5-21)	STREET LIGHT 5-2" CONDUITS WITH WIRING	***	
	DASHED SYMBOL INDICATES EXST		di , , , , , , , , , , , , , , , , , , ,

NOTE: DASHED SYMBOL INDICATES EXST

DRAWING REVIEW Reviewed for HECO's Facilities Only Customer Installations Department Hawaiian Electric Company, Inc. HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY DEPT. OF TRANSPORTATION SERVICES CITY & COUNTY OF HONOLULU 7/16/09 CHIEF, TRAFFIC REVIEW BRANCH DEPT. OF PLANNING AND PERMITTING CITY & COUNTY OF HONOLULU

APPROVED BY:



DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portions 71 and 88 EQUIPMENT AND CONDUIT SCHEDULES

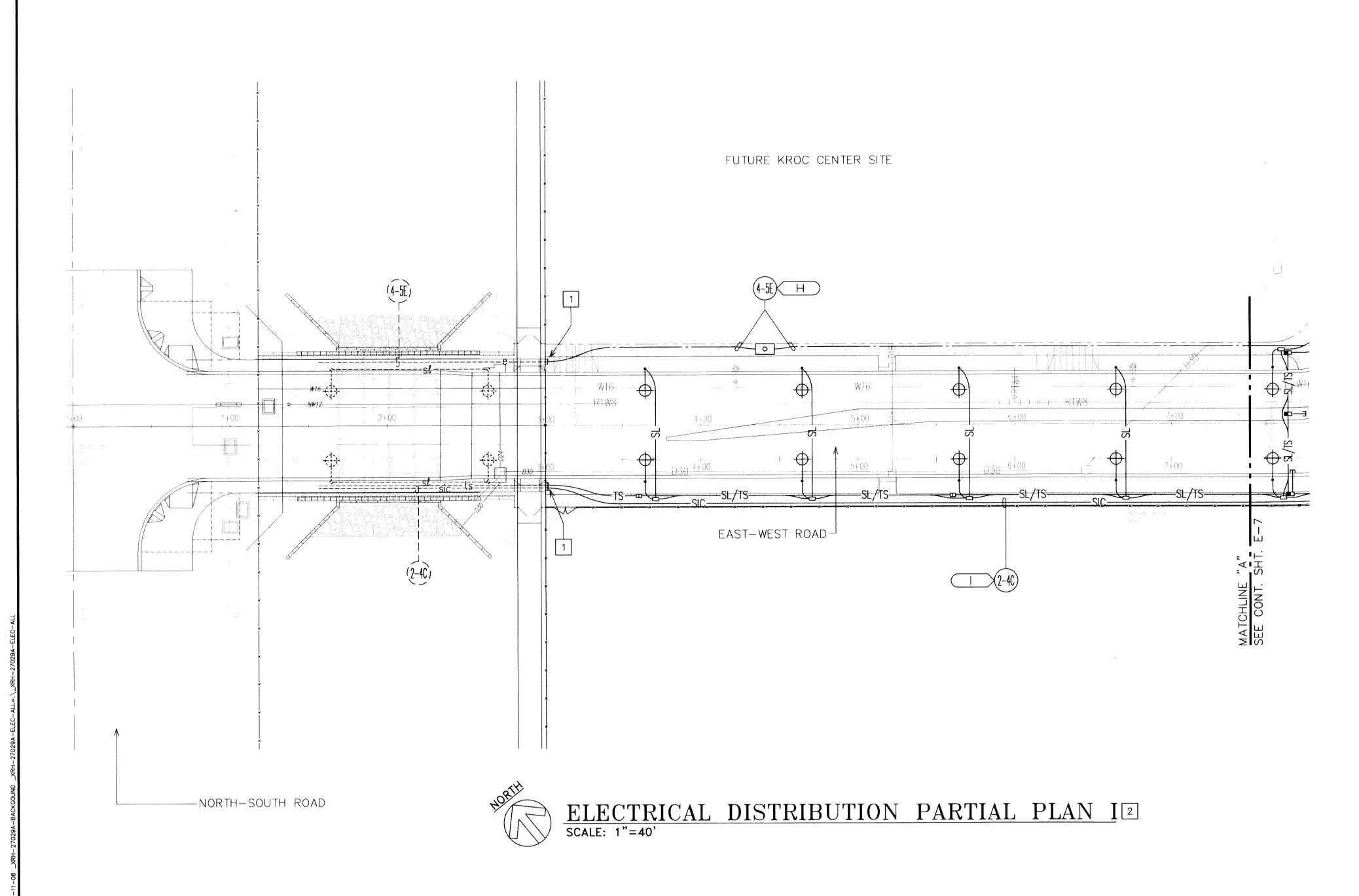
1100 Alakea Street, Stxth Floor

Community Planning and Engineering, Inc. Engineering Design | Construction Management | Infrastructure Planning

EAST KAPOLEI II DEVELOPMENT EAST-WEST ROAD AND ROAD "E" HONOULIULI, EWA, OAHU, HAWAII

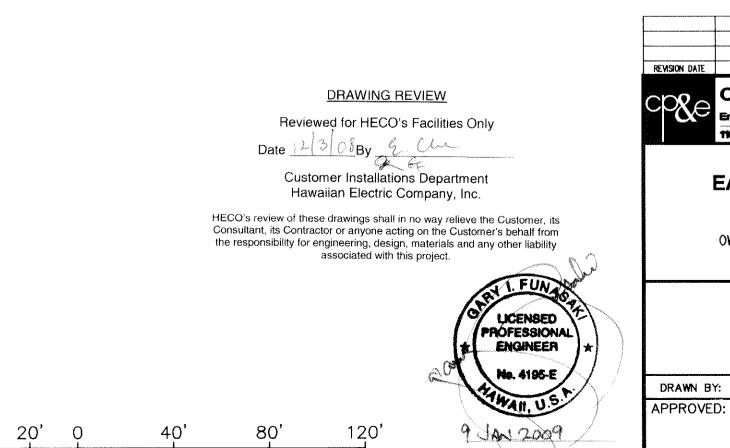
(DPP SUBD. FILE NO. 2008/SUB-21)
OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES

The state of the s	DRAWN BY:	ENGINEER: G	CHECKE	D BY: GF
	APPROVED:	,	-	
9UAN 2009				
THIS WORK WAS PREPARED BY	HAWAIIAN ELECTRIC CO.			
ME OR UNDER MY SUPERVISION.	HAWAIIAN ELECTRIC CU.	DATE	<i>&</i>	DATE
CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.	- Common of the	1-1-1-1	411	,
LICENSE EXPIRATION DATE: 04/30/10	SANDWICH VISLES COMMUNICATION	NS, INC. DATE	CHIEF, MECHANICAL/ELECTRICAL E	12./2/0/08 DIVISION, D.D.C. DATE
	CONTRACTOR OF THE PROPERTY OF	TO, ITO, DITE	O'PET MEOTIFICIONE/LECTIVONE D	ATTICKOTT, D.D.O. DATE



NOTES:

- CAREFULLY EXCAVATE TO EXPOSE EXST DUCTS, PROVIDE COUPLINGS AND EXTEND. CONTRACTOR SHALL VERIFY EXACT LOCATION IN THE FIELD AND ADJUST HIS WORK ACCORDINGLY.
- 2 WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 1.



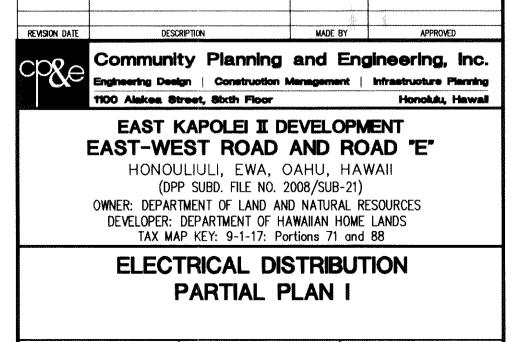
SCALE:

GRAPHIC SCALE

THIS WORK WAS PREPARED BY

ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF JEUS PROJECT

\ WILL BE UNDER MY OBSERVATION.
DISENSE EXPIRATION DATE: 04/30/10



ENGINEER: GF

CHECKED BY: GF

DWG. NO. **E-6** SHEET 47 OF 94 SHEETS

SANDWICH ISLES COMMUNICATIONS, INC. DATE

FUTURE KROC CENTER SITE FUTURE MIDDLE SCHOOL SITE -20' X 20' COMMUNICATION EQUIPMENT EAST-WEST ROAD EASEMENT SEE ENLARGED—PLAN A E-24 ELECTRICAL DISTRIBUTION PARTIAL PLAN II 12
SCALE: 1"=40" NOTES: 1 ELECTRICAL DUCTLINE SHALL CROSS BELOW DRAIN/WATER/SEWER LINES AS REQUIRED TO PROVIDE REQUIRED CLEARANCE TO CIVIL UTILITY LINES. WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 1 AND PHASE 2 AS INDICATED. DRAWING REVIEW Reviewed for HECO's Facilities Only Date 12/3/08By 9 9 Cove Customer Installations Department Hawaiian Electric Company, Inc. 1100 Alekea Street, Sixth Floor EAST KAPOLEI II DEVELOPMENT EAST-WEST ROAD AND ROAD "E"



SCALE:

GRAPHIC SCALE

THIS WORK WAS EREPARED BY

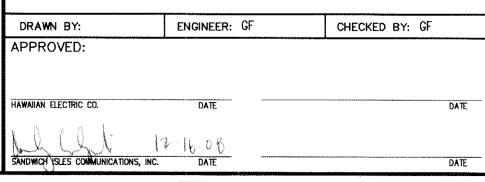
ME OR UNDER MY SUPERVISION.

CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/10

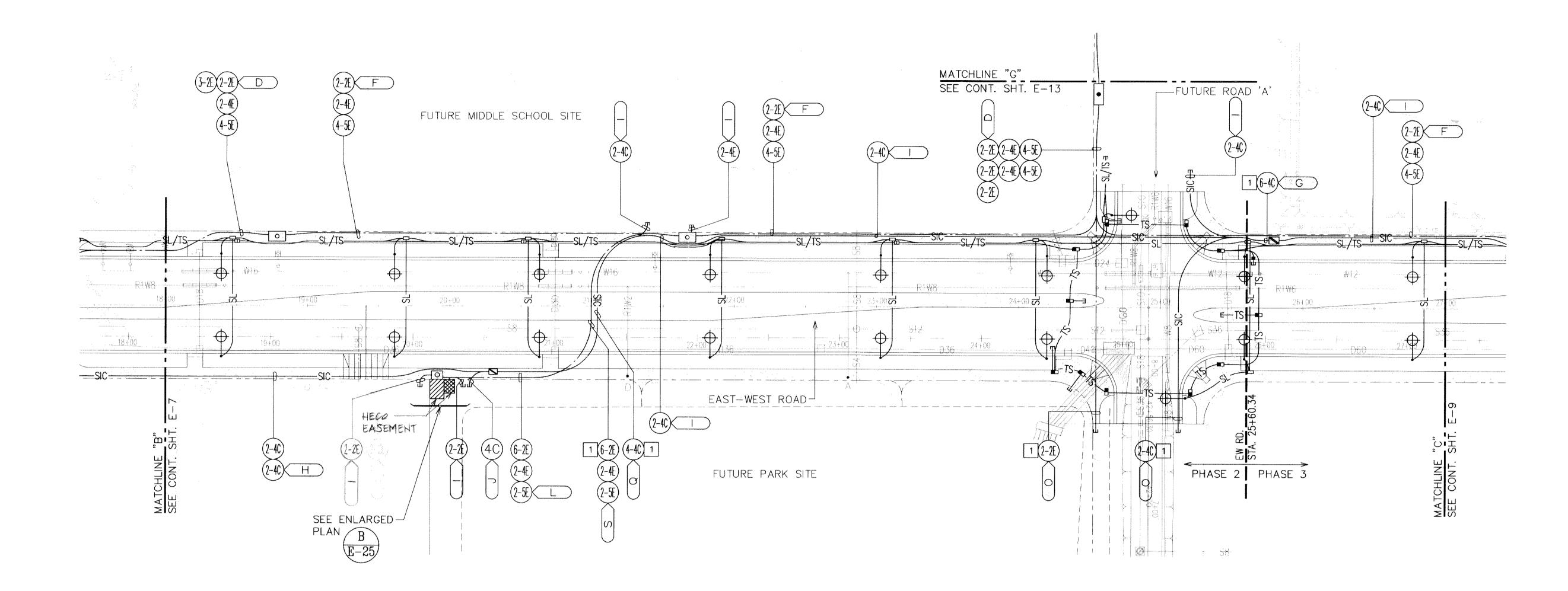
Community Planning and Engineering, Inc.

HONOULIULI, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2008/SUB-21) OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES
DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portions 71 and 88

ELECTRICAL DISTRIBUTION PARTIAL PLAN II



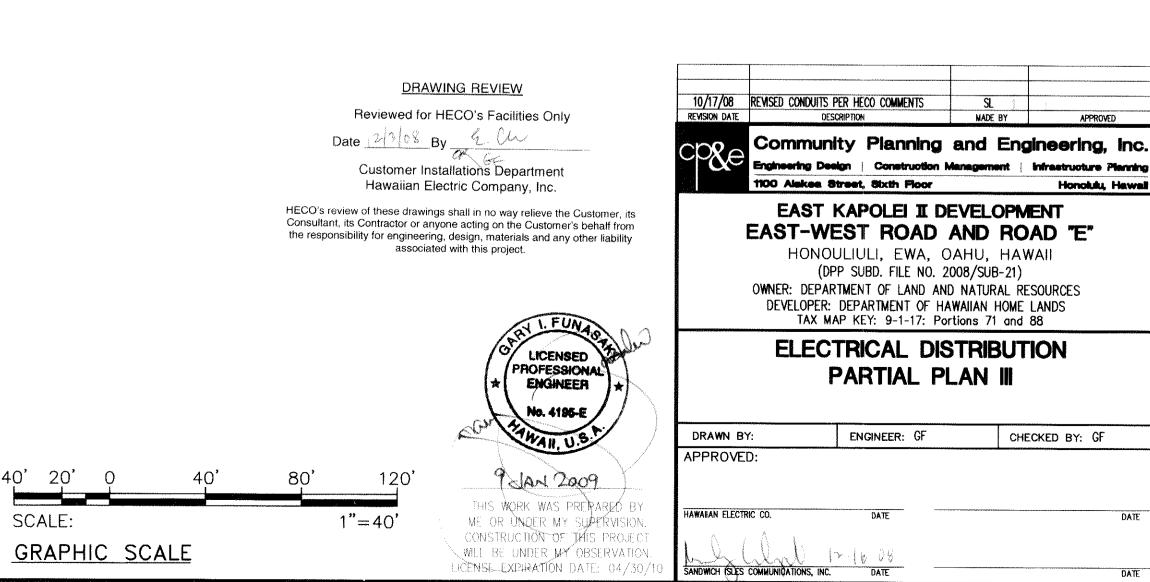
DWG. NO. **E-7** SHEET <u>48</u> OF <u>94</u> SHEETS



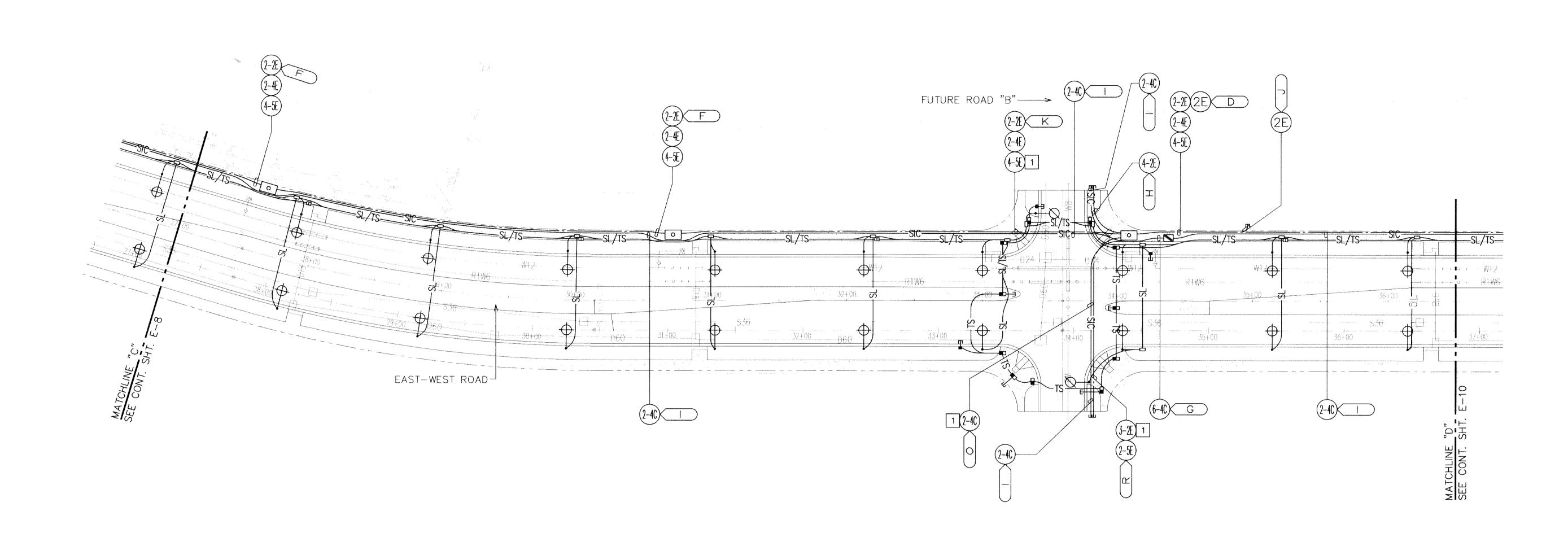


NOTES:

- 1 ELECTRICAL DUCTLINE SHALL CROSS BELOW DRAIN/WATER/SEWER LINES AS REQUIRED TO PROVIDE REQUIRED CLEARANCE TO CIVIL UTILITY LINES.
- 2 WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 2 AND PHASE 3 AS INDICATED.



DWG. NO. **E-8** SHEET <u>49</u> OF <u>94</u> SHEETS





ELECTRICAL DISTRIBUTION PARTIAL PLAN IV 12
SCALE: 1"=40'

NOTES:

1 ELECTRICAL DUCTLINE SHALL CROSS BELOW DRAIN/WATER/SEWER LINES AS REQUIRED TO PROVIDE REQUIRED CLEARANCE TO CIVIL UTILITY LINES.

2 WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 3.

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 1/3 to 8 by

Customer Installations Department
Hawaiian Electric Company, inc.

HECO's review of these drawings shall in on way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

HONOULIULI, E (VPP SUBB. FEI)

OWNER: DEPARTMENT OF L

DEVELOPER: DEPARTMENT TAX MAP KEY: 9-1

ELECTRICAL PARTIA

DRAWN BY: ENGINEER: APPROVED:

NAMAN BY: ENGINEER: APPROVED:

HAWAIN BECTRIC CO. DATE

GRAPHIC SCALE

1"=40'

SCALE: 1"=40'

GRAPHIC SCALE

1"=40'

SCALE: 04/36/10

ANAMAN BECTRIC CO. DATE

NAMAN BECTRIC CO. DATE

NAM

10/17/08 REMSED CONDUITS PER HECO COMMENTS
REMSION DATE

COMMUNITY Planning and Engineering, Inc.
Engineering Deelgn | Construction Management | Infrastructure Planning
1100 Alekea Street, Sixth Floor Hornoldu, Hawaii

EAST KAPOLEI II DEVELOPMENT
EAST—WEST ROAD AND ROAD "E"

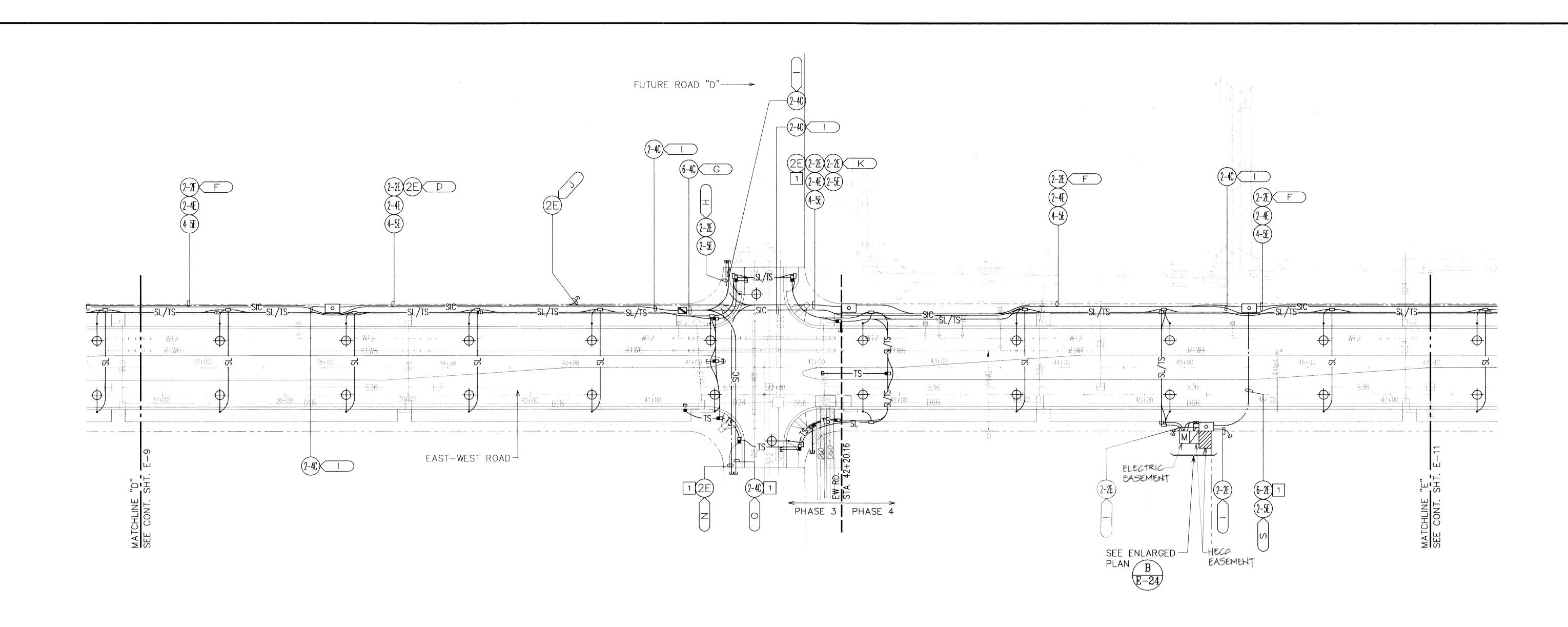
HONOULIULI, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2008/SUB-21)

OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES
DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portions 71 and 88

ELECTRICAL DISTRIBUTION
PARTIAL PLAN IV

DRAWN BY: ENGINEER: GF CHECKED BY: GF

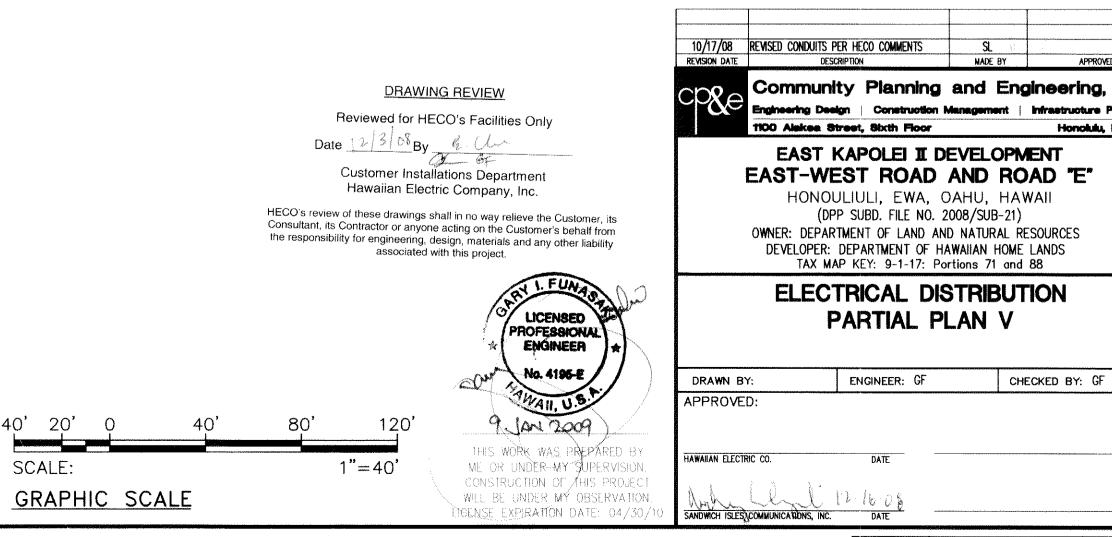
DWG. NO. **E-9** SHEET <u>50</u> OF <u>94</u> SHEETS



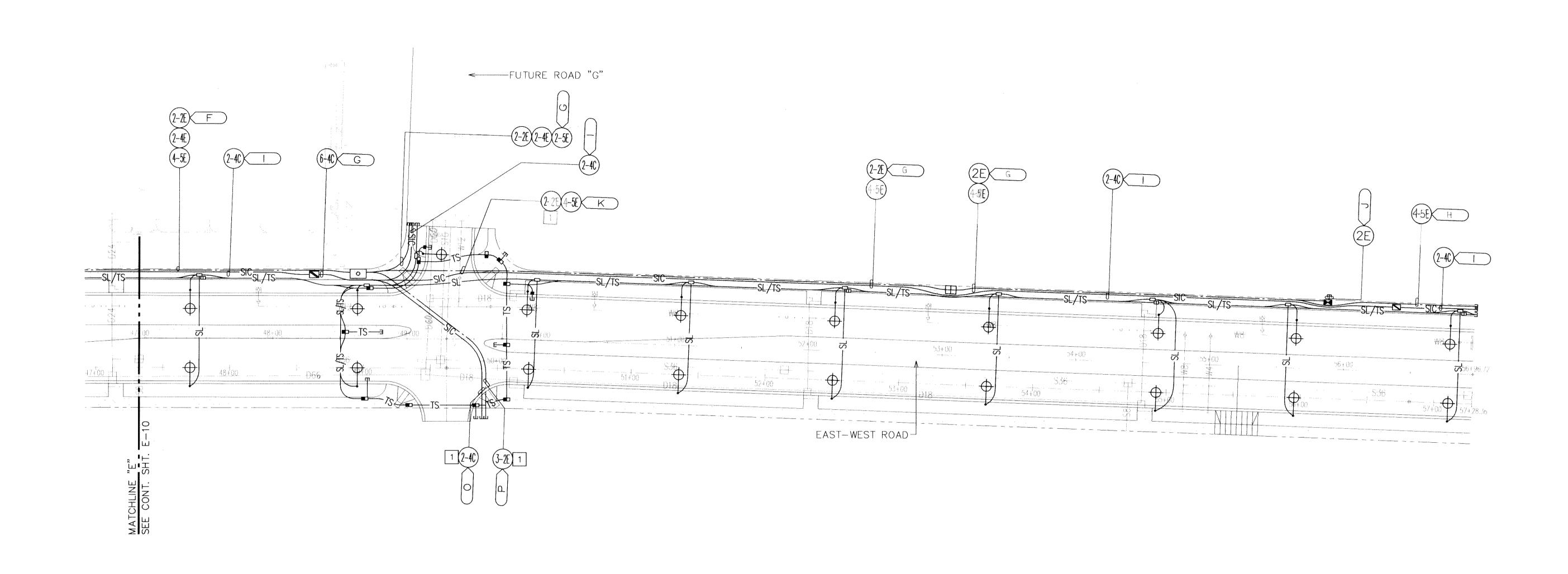


NOTES:

- 1 ELECTRICAL DUCTLINE SHALL CROSS BELOW DRAIN/WATER/SEWER LINES AS REQUIRED TO PROVIDE REQUIRED CLEARANCE TO CIVIL UTILITY LINES.
- WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 3 AND PHASE 4 AS INDICATED.



DWG. NO. **E-10** SHEET <u>51</u> OF <u>94</u> SHEETS





*ELECTRICAL DISTRIBUTION PARTIAL PLAN VI 12
SCALE: 1"=40'

NOTES:

- 1 ELECTRICAL DUCTLINE SHALL CROSS BELOW DRAIN/WATER/SEWER LINES AS REQUIRED TO PROVIDE REQUIRED CLEARANCE TO CIVIL UTILITY LINES.
- 2 WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 4.

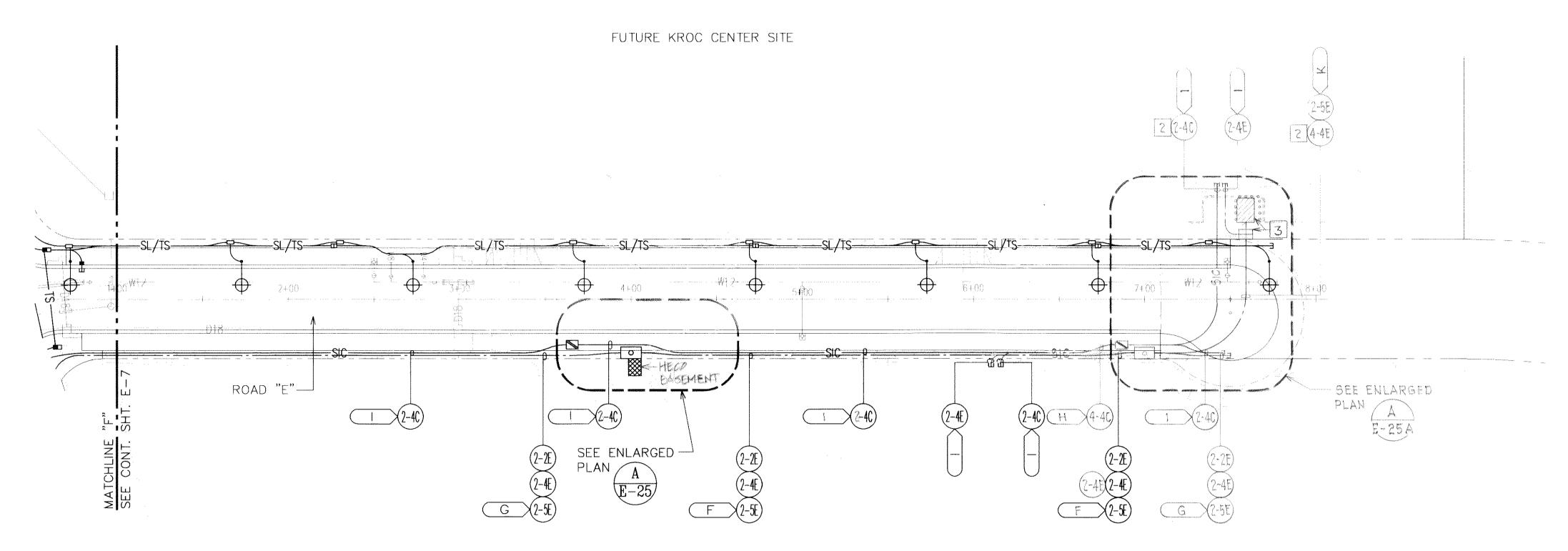
DRAWING REVIEW Reviewed for HECO's Facilities Only Customer Installations Department Hawaiian Electric Company, Inc. HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project. LICENSED PROFESSIONAL ENGINEER THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT GRAPHIC SCALE K WILL BE UNDER MY OBSERVATION.

Community Planning and Engineering, Inc. EAST KAPOLEI II DEVELOPMENT EAST-WEST ROAD AND ROAD "E" HONOULIULI, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2008/SUB-21)

OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES
DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portions 71 and 88 **ELECTRICAL DISTRIBUTION** PARTIAL PLAN VI

ENGINEER: GF CHECKED BY: GF DRAWN BY: APPROVED: SANDWICH JSDES COMMUNICATIONS, INC. DATE

LICENSE EXPIRATION DATE: 04/30/

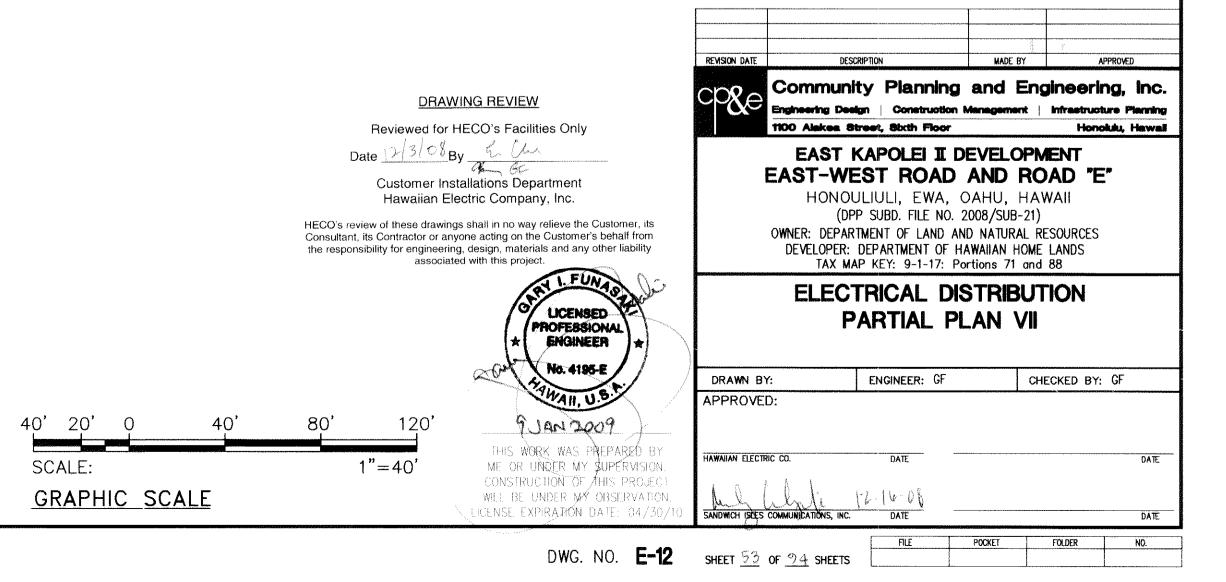


FUTURE MIDDLE SCHOOL SITE

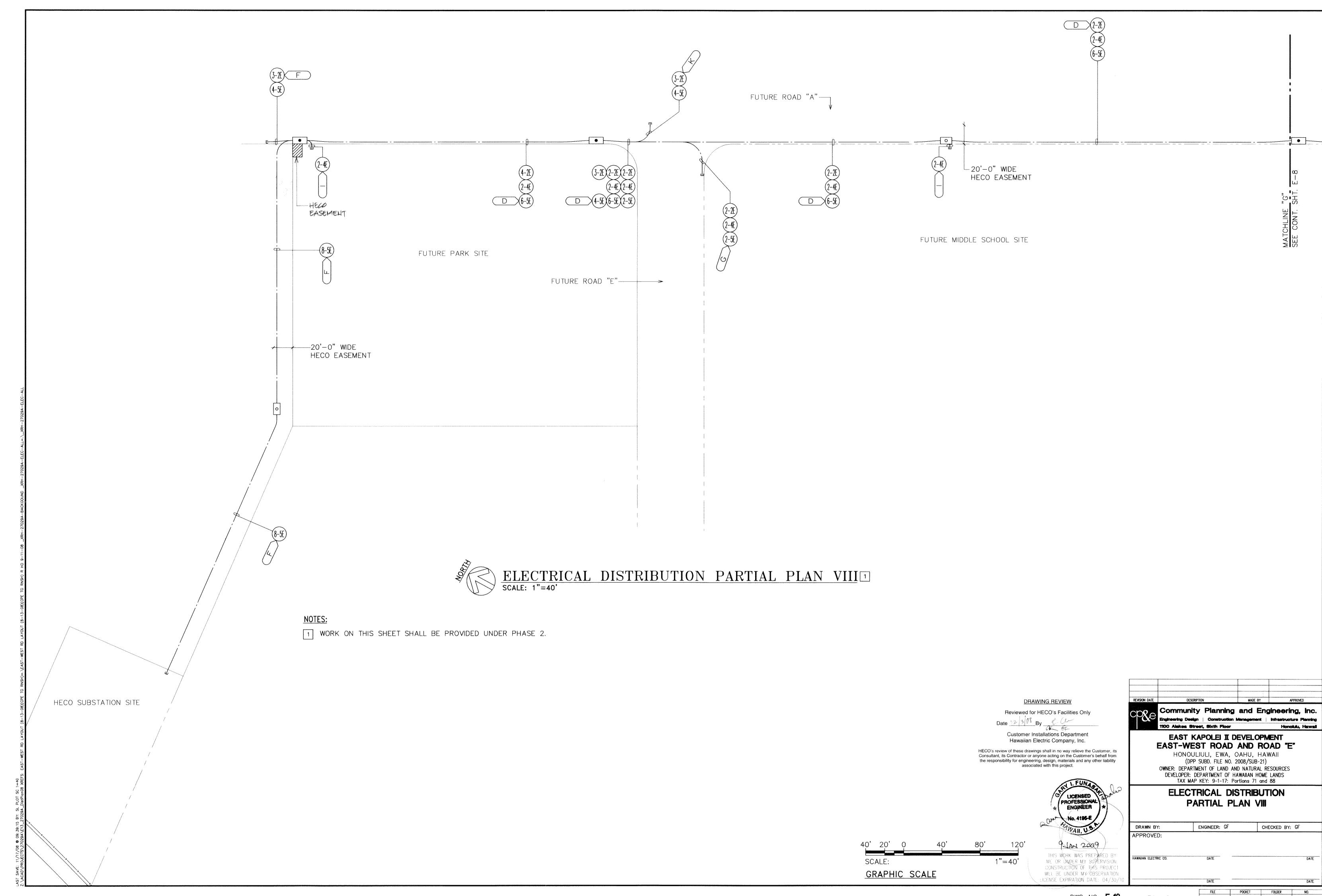


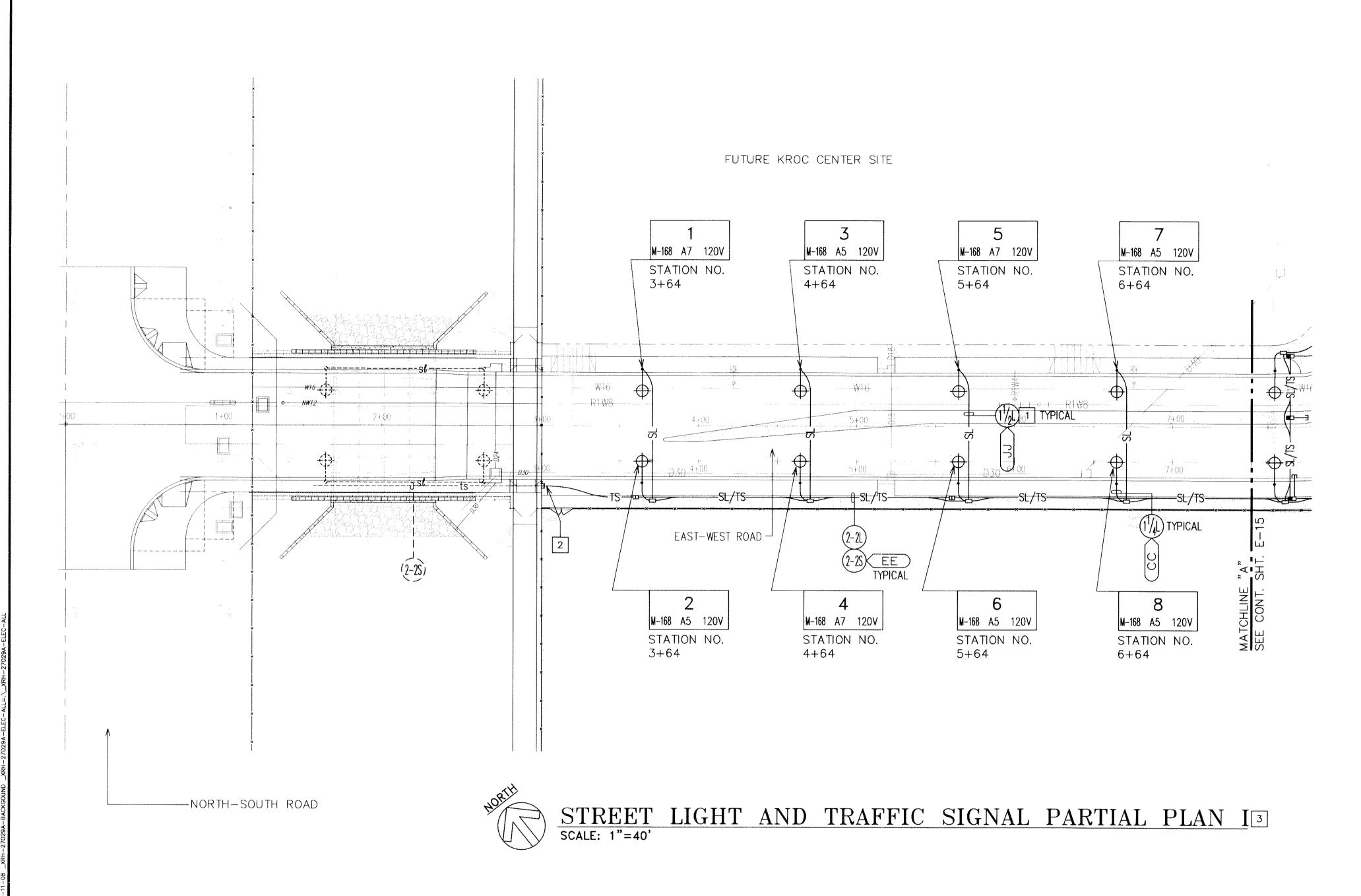
NOTES:

- 1 WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 1.
- 2 ELECTRICAL DUCTLINE SHALL CROSS BELOW DRAIN/WATER/SEWER LINES AS REQUIRED TO PROVIDE REQUIRED CLEARANCE TO CIVIL UTILITY LINES.
- 3 CONTRACTOR SHALL YERIFY FINAL FILISHED GRADE PRIOR TO ROUGHT-IN.



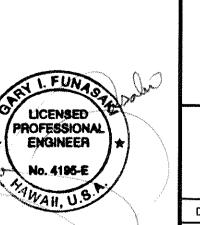
ALACT CAVE 11 /17 /08 @ DO 88 00 BY C! 11 /3/A2 T2A





NOTES:

- 1 STREET LIGHT/TRAFFIC SIGNAL DUCTLINE SHALL CROSS BELOW WATERLINES.
- 2 CAREFULLY EXCAVATE TO EXPOSE EXST DUCTS, PROVIDE COUPLINGS AND EXTEND. CONTRACTOR SHALL VERIFY EXACT LOCATION IN THE FIELD AND ADJUST HIS WORK ACCORDINGLY.
- 3 WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 1.



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION

LICENSE EXPIRATION DATE: 04/30,

GRAPHIC SCALE

(DPP SUBD. FILE NO. 2008/SUB-21)

OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES
DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portions 71 and 88

STREET LIGHT AND TRAFFIC SIGNAL
PARTIAL PLAN I

1100 Alakea Street, Stxth Floor

Community Planning and Engineering, Inc.

EAST KAPOLEI II DEVELOPMENT EAST-WEST ROAD AND ROAD "E" HONOULIULI, EWA, OAHU, HAWAII

DRAWN BY:

ENGINEER: GF

CHECKED BY: GF

APPROVED:

DATE

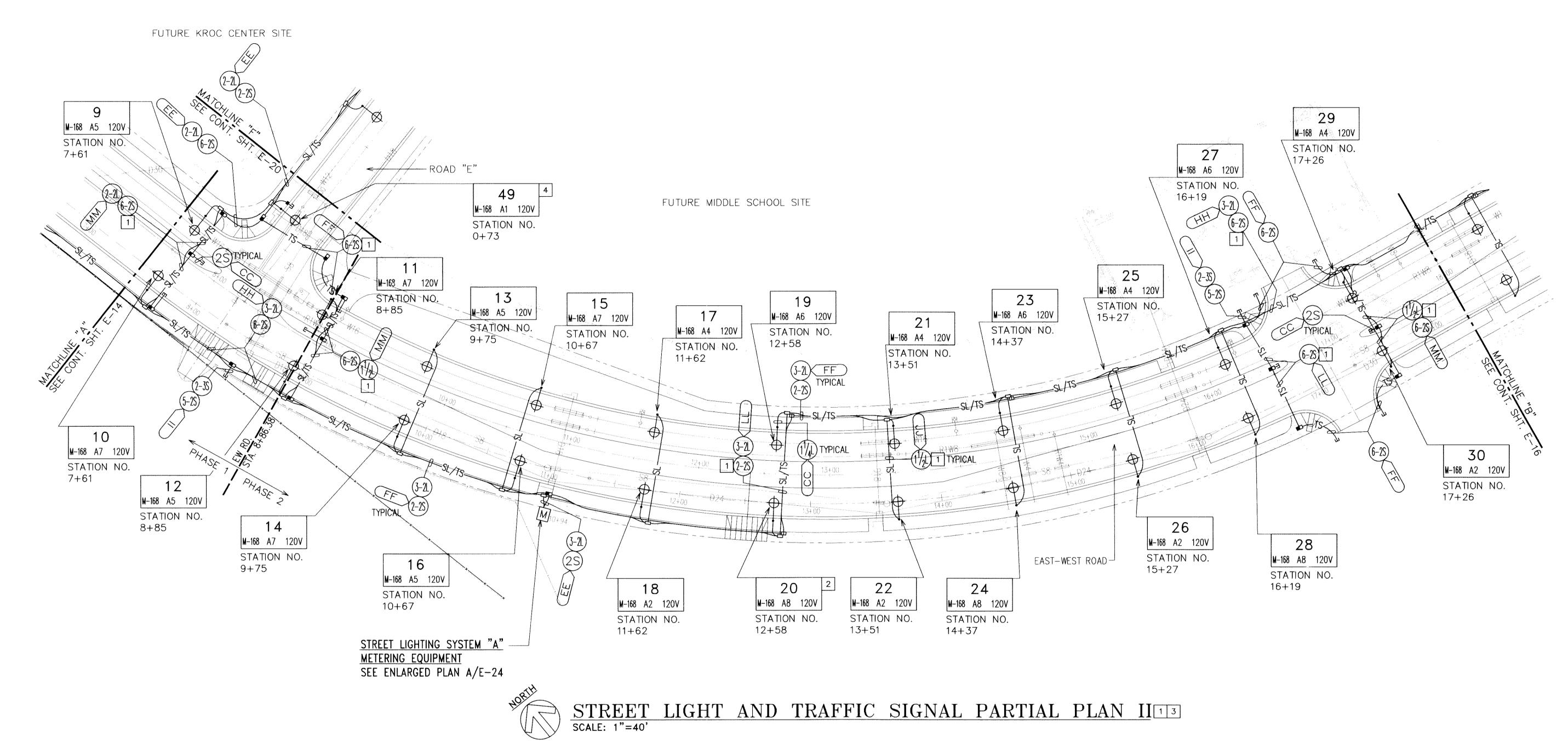
CHIEF, TRAFFIC NEVIEW BRANCH, D.P.P. CW

DATE

CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY, D.T.S. DATE

CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY, D.T.S. DATE

DWG. NO. **E-14** SHEET <u>55</u> OF <u>94</u> SHEETS



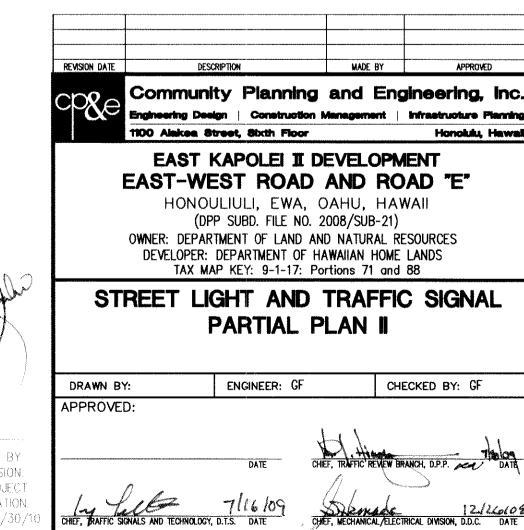
NOTES:

1 STREET LIGHT/TRAFFIC SIGNAL DUCTLINE SHALL CROSS BELOW DRAIN WATER SEWER LINES AS REQUIRED TO PROVIDE REQUIRED CLÉARANCÉ TO CIVIL UTILITY LINES.

2 PROVIDE 3' MINIMUM CLEAR TO DRIVEWAY.

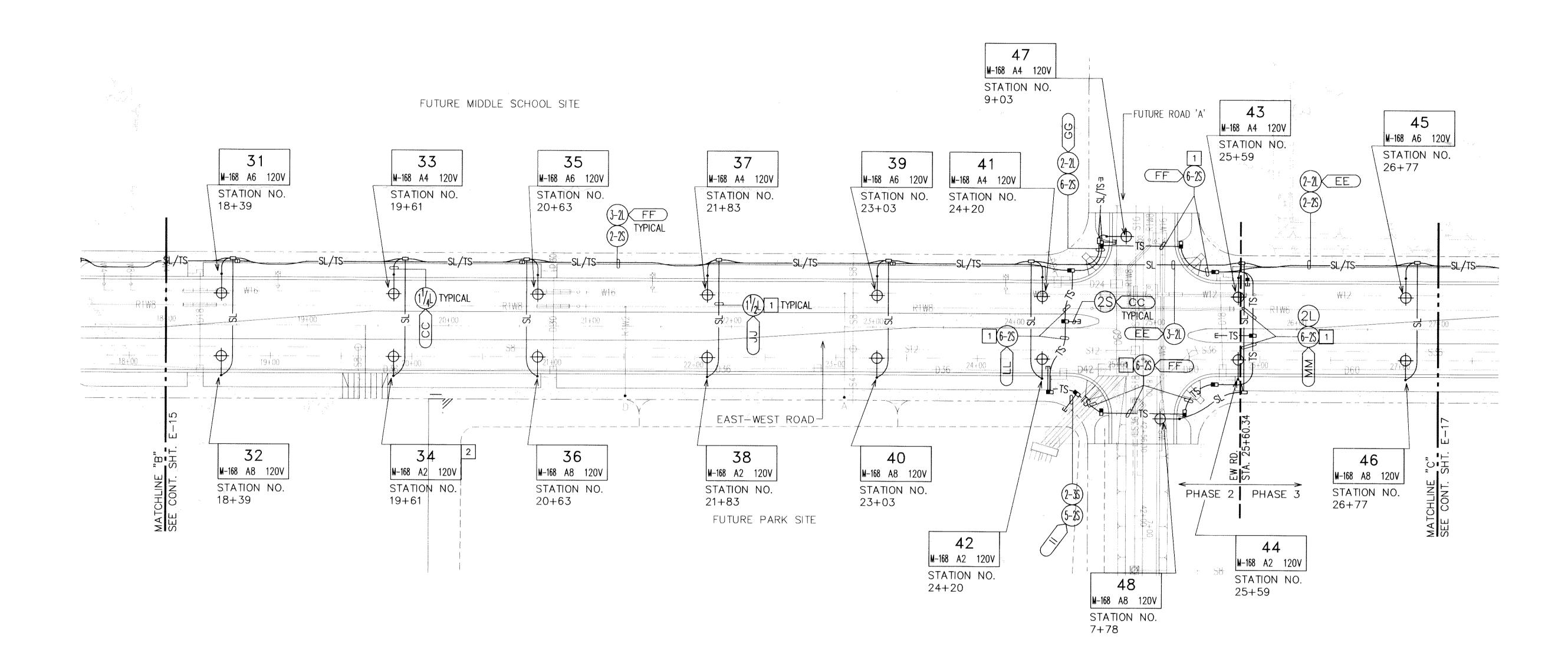
WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 1 AND PHASE 2 AS INDICATED.

4 PROVIDE IES TYPE II DISTRIBUTION.



CHECKED BY: GF

SCALE:

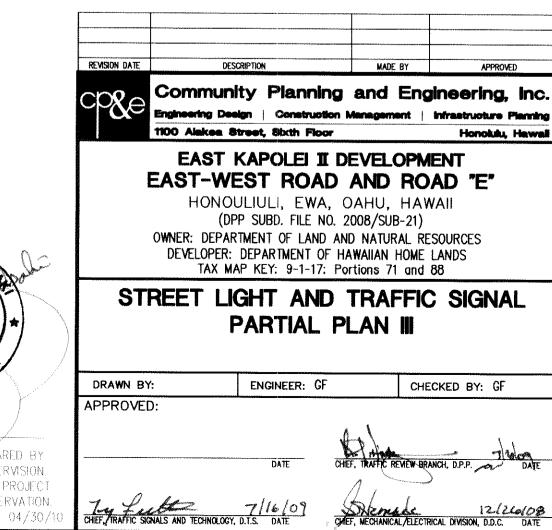




STREET LIGHT AND TRAFFIC SIGNAL PARTIAL PLAN III 1 3
SCALE: 1"=40'

NOTES:

- 1 STREET LIGHT/TRAFFIC SIGNAL DUCTLINE SHALL CROSS BELOW DRAIN WATER SEWER LINES AS REQUIRED TO PROVIDE REQUIRED CLÉARANCÉ TO CIVIL UTILITY LINES.
- 2 PROVIDE 3' MINIMUM CLEAR TO DRIVEWAY.
- 3 WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 2 AND PHASE 3 AS INDICATED.



CHECKED BY: GF

PROFESSIONAL ENGINEER

9 JAN 2009 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/

GRAPHIC SCALE

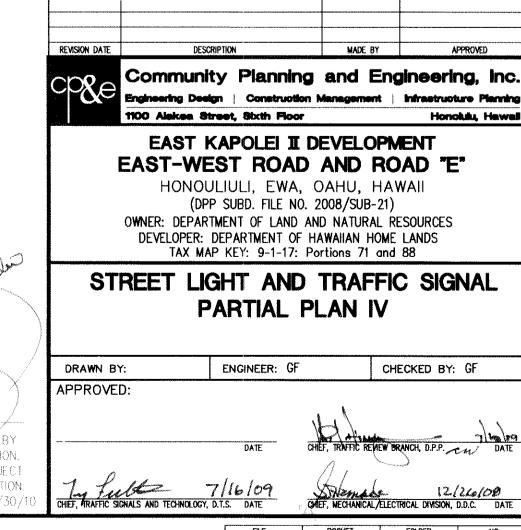


*STREET LIGHT AND TRAFFIC SIGNAL PARTIAL PLAN IV 12

NOTES:

1 STREET LIGHT/TRAFFIC SIGNAL DUCTLINE SHALL CROSS BELOW DRAIN WATER SEWER LINES AS REQUIRED TO PROVIDE REQUIRED CLÉARANCE TO CIVIL UTILITY LINES.

2 WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 3.



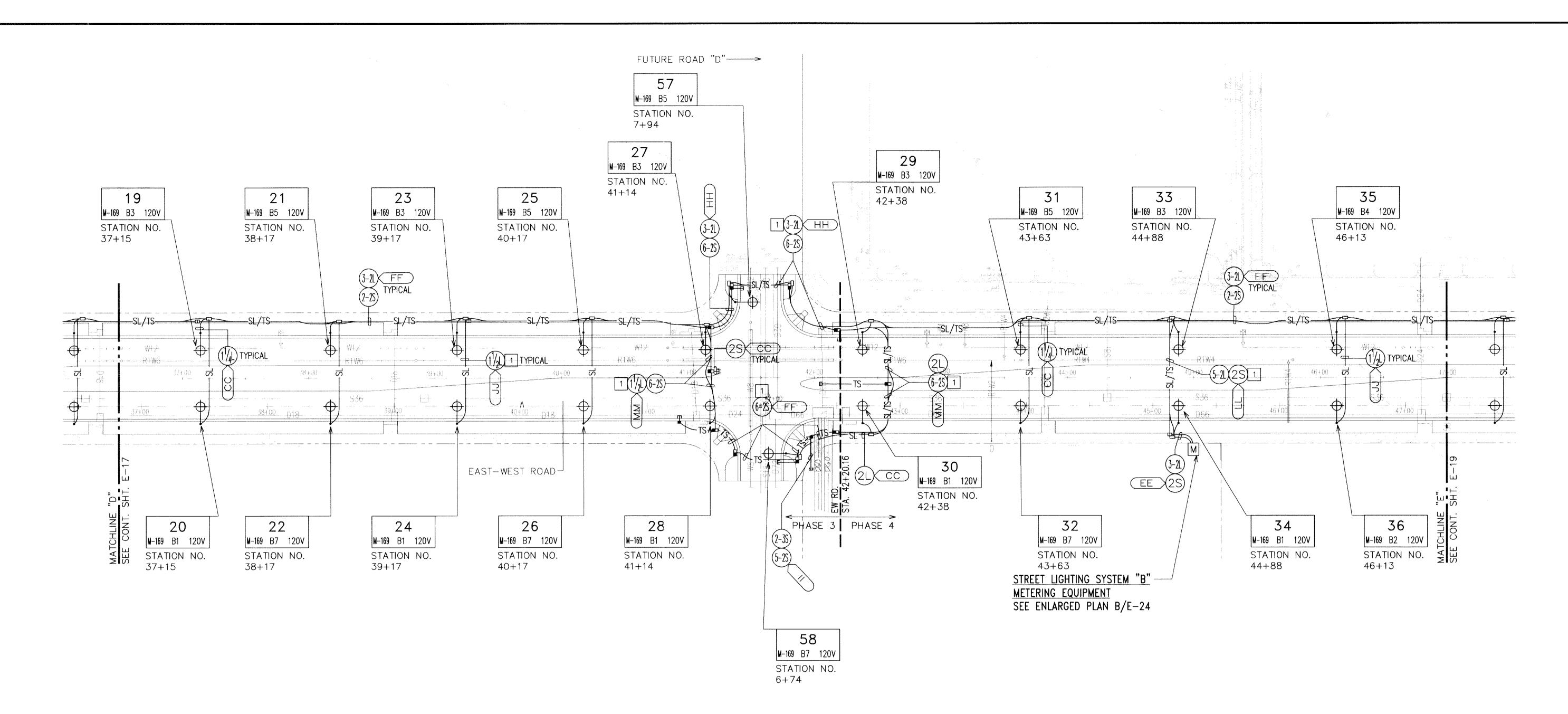
LICENSED PROFESSIONAL ENGINEER

SCALE:

GRAPHIC SCALE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT - WILL BE UNDER MYJØBSERVATION. EXPIRATION DATE: 04/30

DWG. NO. **E-17** SHEET <u>58</u> OF <u>94</u> SHEETS

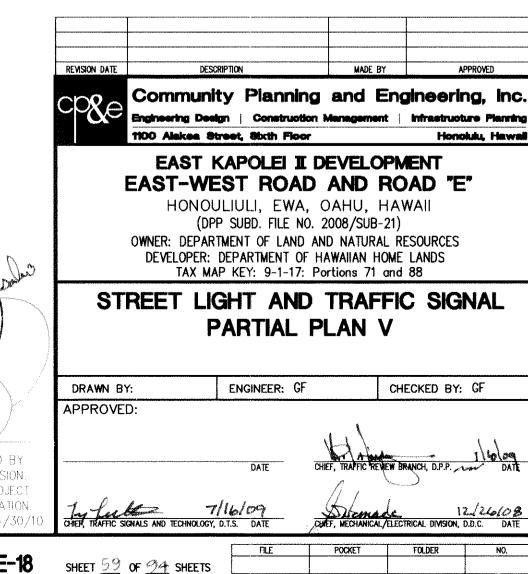




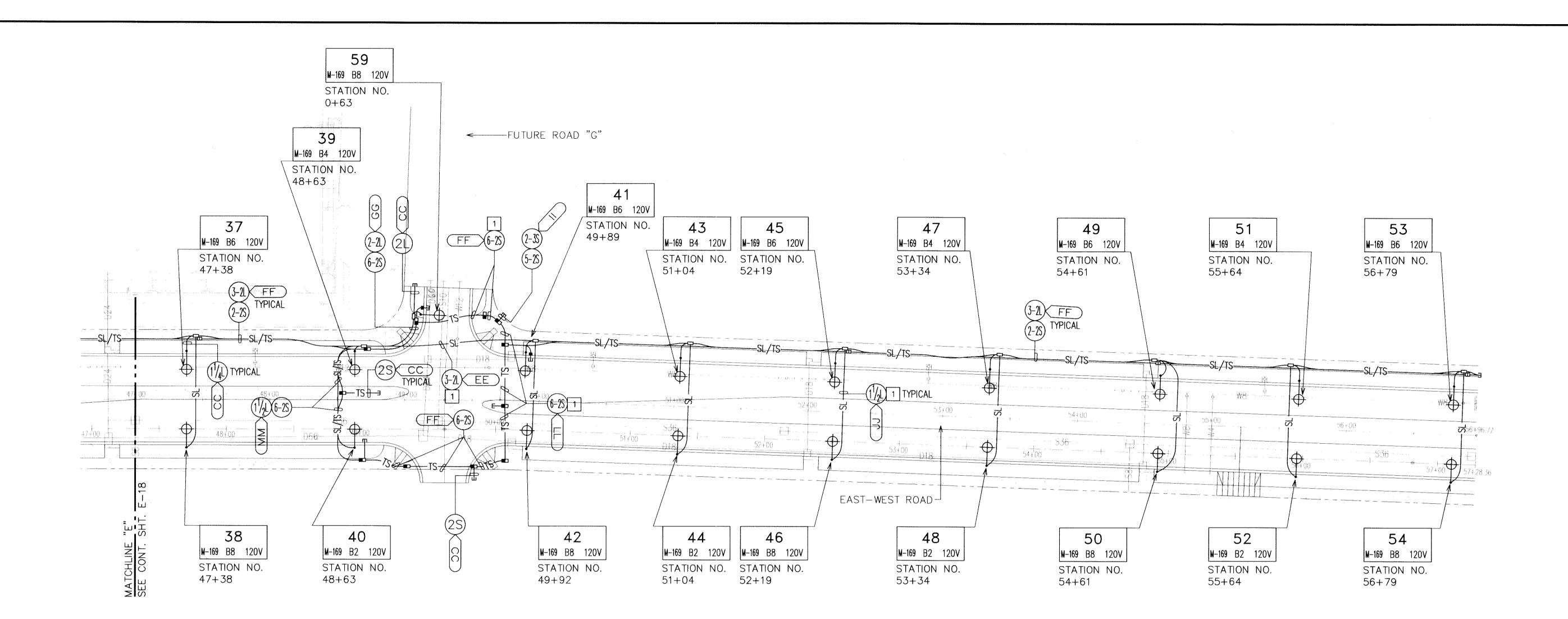
STREET LIGHT AND TRAFFIC SIGNAL PARTIAL PLAN V12

NOTES:

- 1 STREET LIGHT/TRAFFIC SIGNAL DUCTLINE SHALL CROSS BELOW DRAIN/WATER/SEWER LINES AS REQUIRED TO PROVIDE REQUIRED CLÉARANCÉ TO CIVIL UTILITY LINES.
- 2 WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 3 AND PHASE 4 AS INDICATED.



PROFESSIONAL ENGINEER 9-124 2009 THIS WORK WAS PREPÁRED BY ME OR UNDER MY SUPERVISION. SCALE: CONSTRUCTION OF THIS PROJECT GRAPHIC SCALE ∖WILL BE UNDER-MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30,

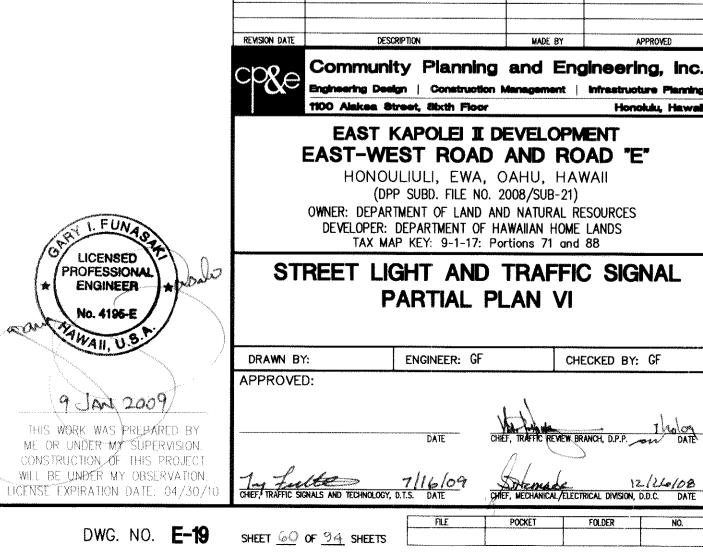




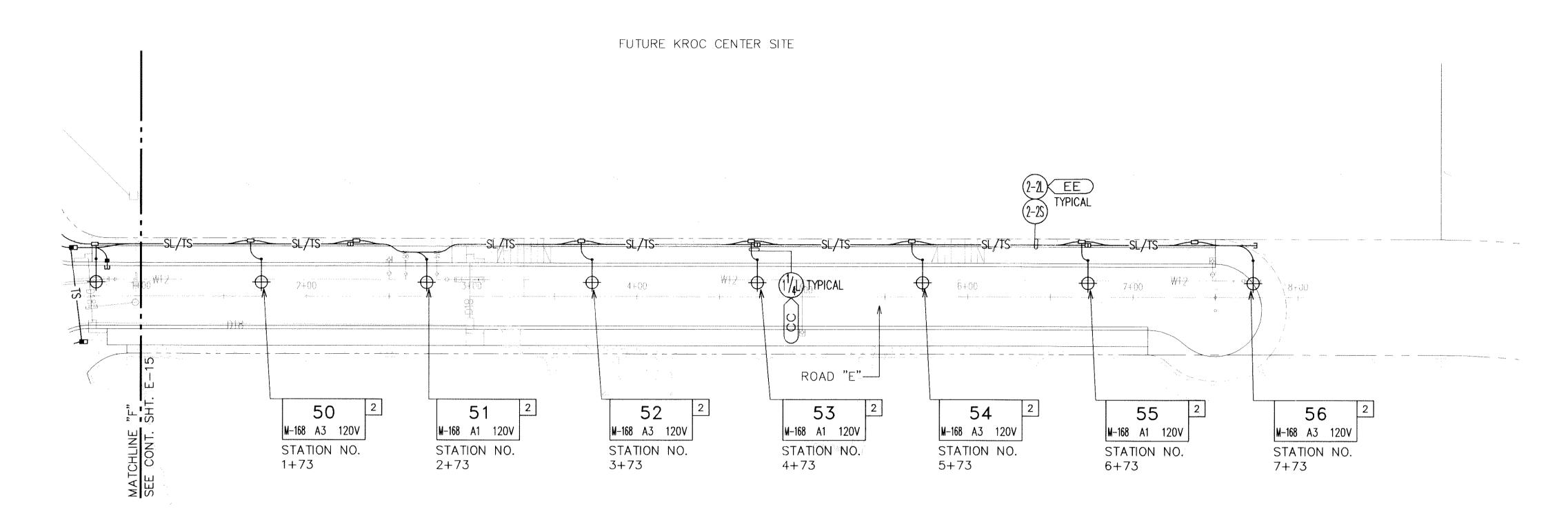
STREET LIGHT AND TRAFFIC SIGNAL PARTIAL PLAN VI 12

NOTES:

- STREET LIGHT/TRAFFIC SIGNAL DUCTLINE SHALL CROSS BELOW DRAIN/WATER/SEWER LINES AS REQUIRED TO PROVIDE REQUIRED CLÉARANCÉ TO CIVIL UTILITY LINES.
- 2 WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 4.



GRAPHIC SCALE



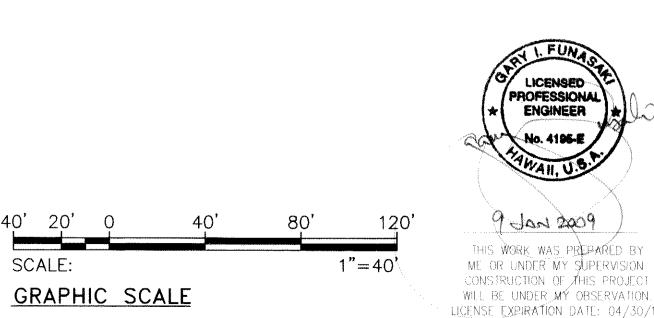
FUTURE MIDDLE SCHOOL SITE

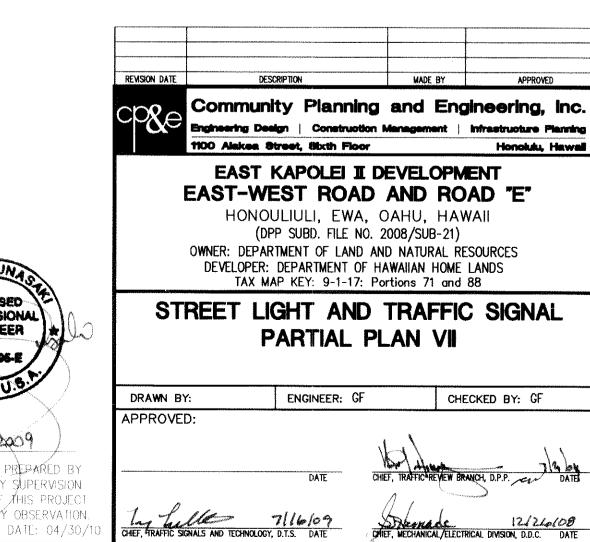


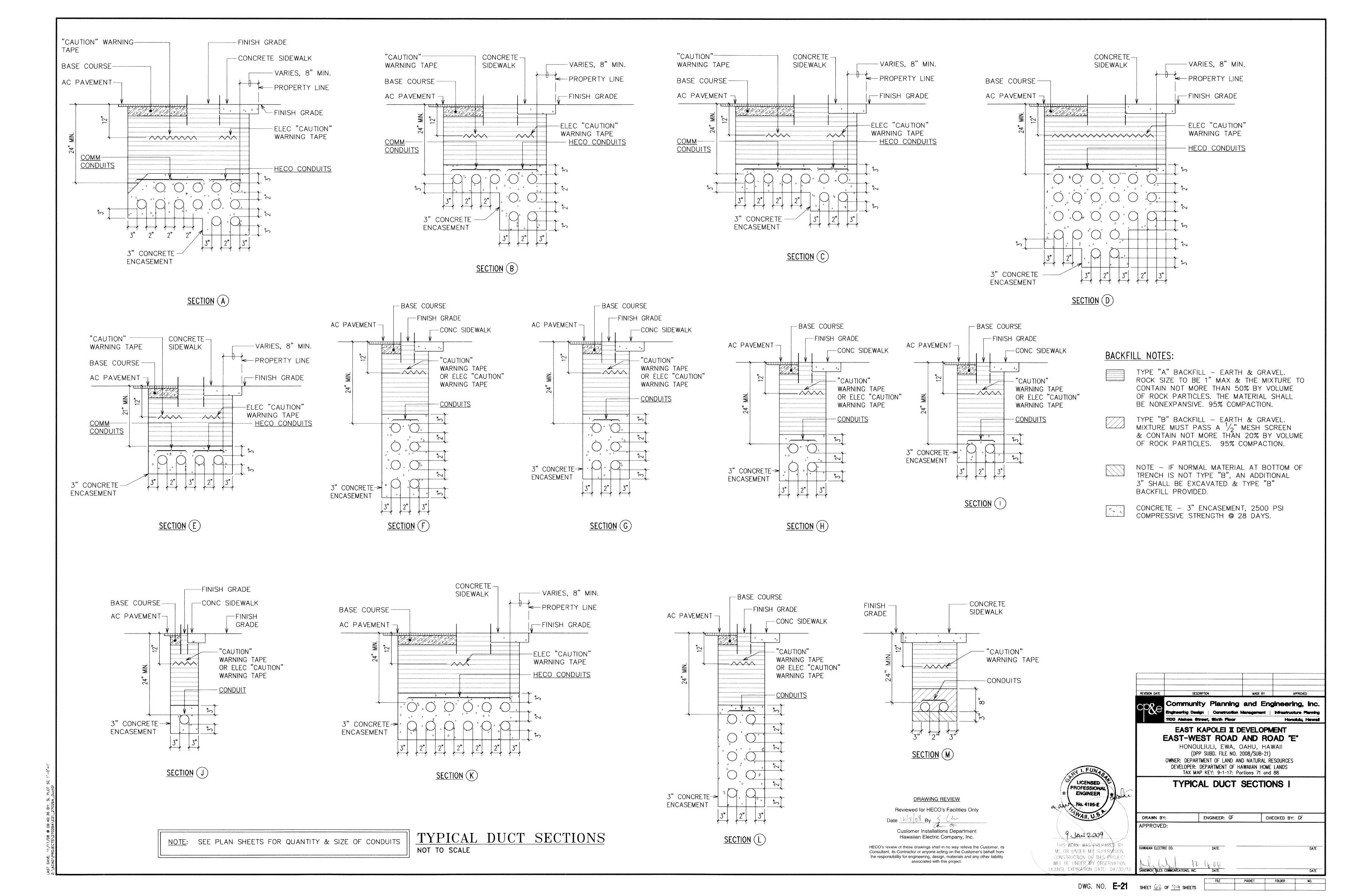
NOTES:

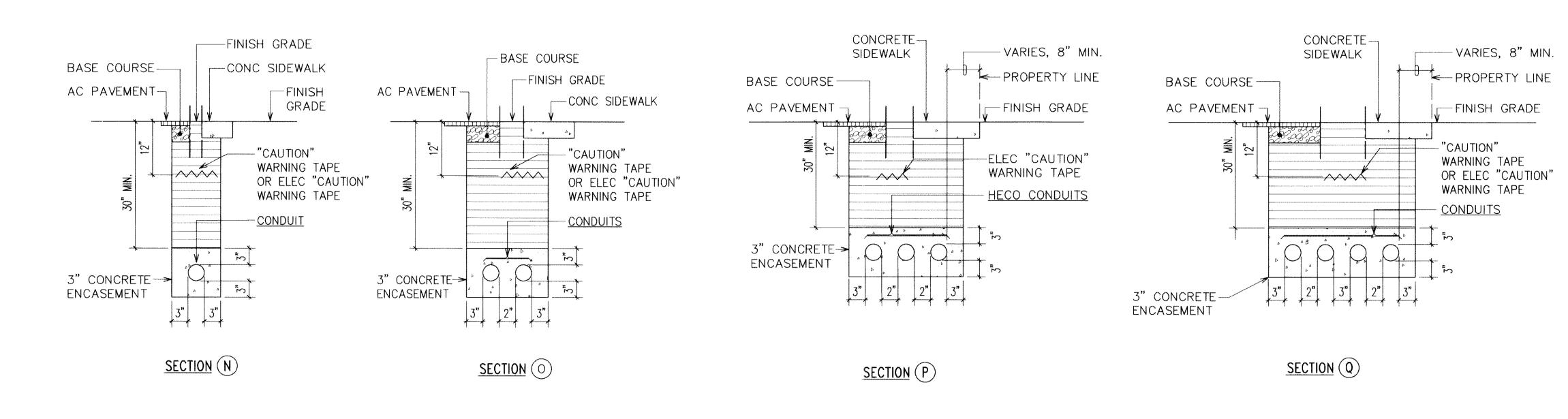
1 WORK ON THIS SHEET SHALL BE PROVIDED UNDER PHASE 1.

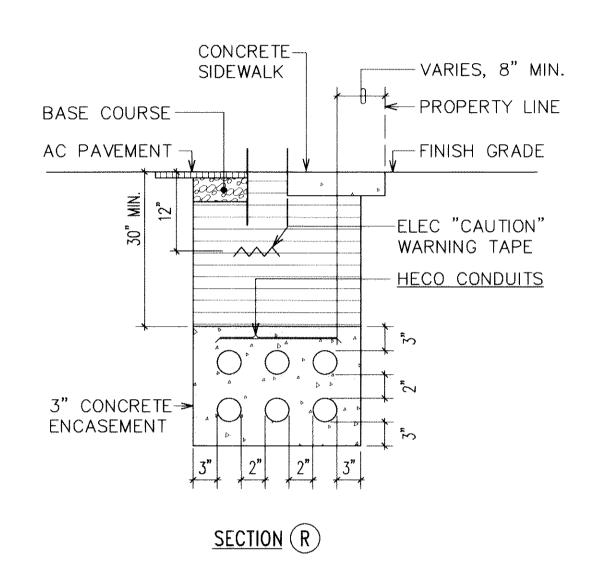
2 PROVIDE IES TYPE II DISTRIBUTION.



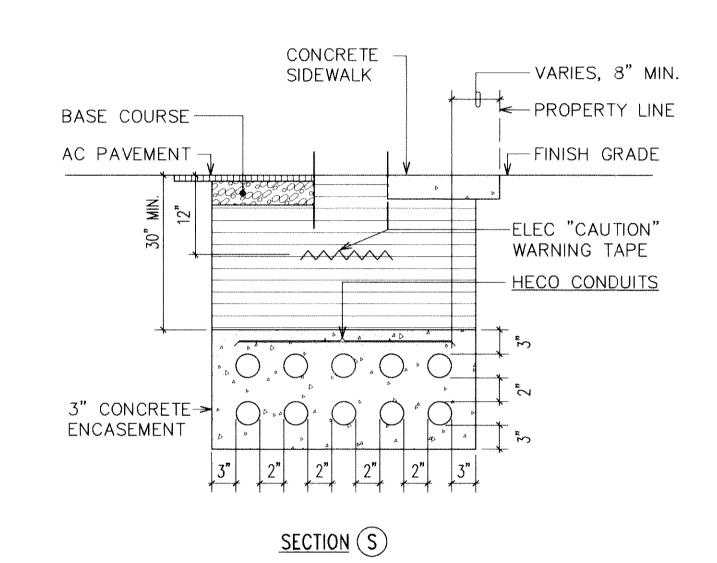








NOTE: SEE PLAN SHEETS FOR QUANTITY & SIZE OF CONDUITS

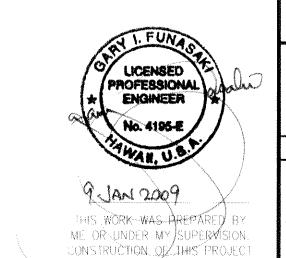


DRAWING REVIEW

Reviewed for HECO's Facilities Only

Customer Installations Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.



WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/1

	Community Planning	and Eng	ineering, Inc.
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

EAST KAPOLEI II DEVELOPMENT
EAST-WEST ROAD AND ROAD "E"

HONOULIULI, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2008/SUB-21)
OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES
DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portions 71 and 88

TYPICAL DUCT SECTIONS II

DRAWN BY:	ENGINEER: GF	CHECKED BY:	GF
APPROVED:			,,,,,
HAWAIIAN ELECTRIC CO.	DATE		DATE
all alut	12-16-08		
SANDWICH ISLES COMMUNICATIONS,	INC. DATE		DATE

TYPICAL DUCT SECTIONS
NOT TO SCALE

BACKFILL NOTES:

TYPE "A" BACKFILL - EARTH & GRAVEL.

BE NONEXPANSIVE. 95% COMPACTION.

TYPE "B" BACKFILL - EARTH & GRAVEL.

OF ROCK PARTICLES. 95% COMPACTION.

3" SHALL BE EXCAVATED & TYPE "B"

CONCRETE - 3" ENCASEMENT, 2500 PSI COMPRESSIVE STRENGTH @ 28 DAYS.

BACKFILL PROVIDED.

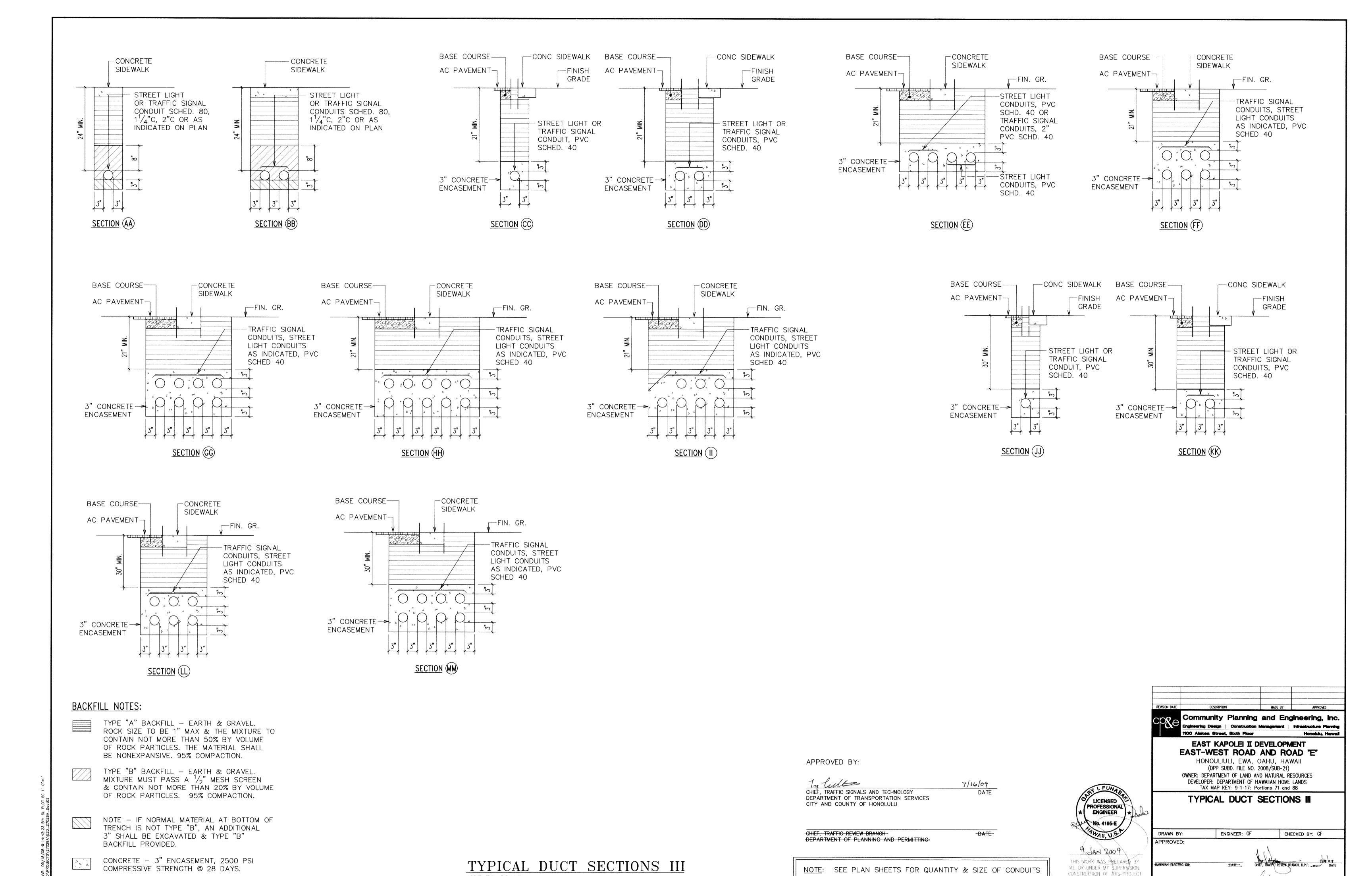
MIXTURE MUST PASS A $\frac{1}{2}$ " MESH SCREEN

& CONTAIN NOT MORE THAN 20% BY VOLUME

NOTE — IF NORMAL MATERIAL AT BOTTOM OF TRENCH IS NOT TYPE "B", AN ADDITIONAL

CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. THE MATERIAL SHALL

ROCK SIZE TO BE 1" MAX & THE MIXTURE TO



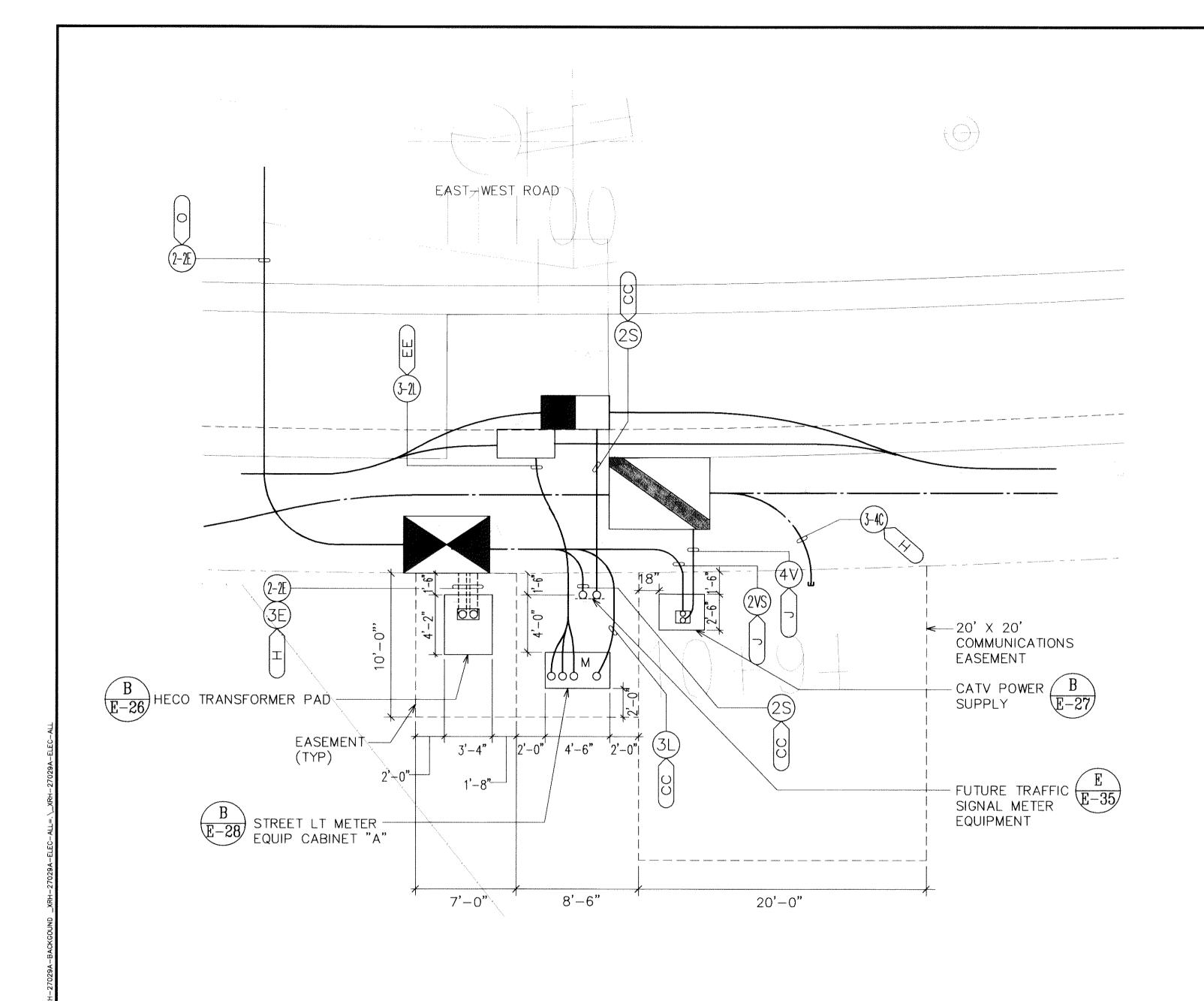
NOT TO SCALE

SANDWICH ISLES COMMUNICATIONS, INC.

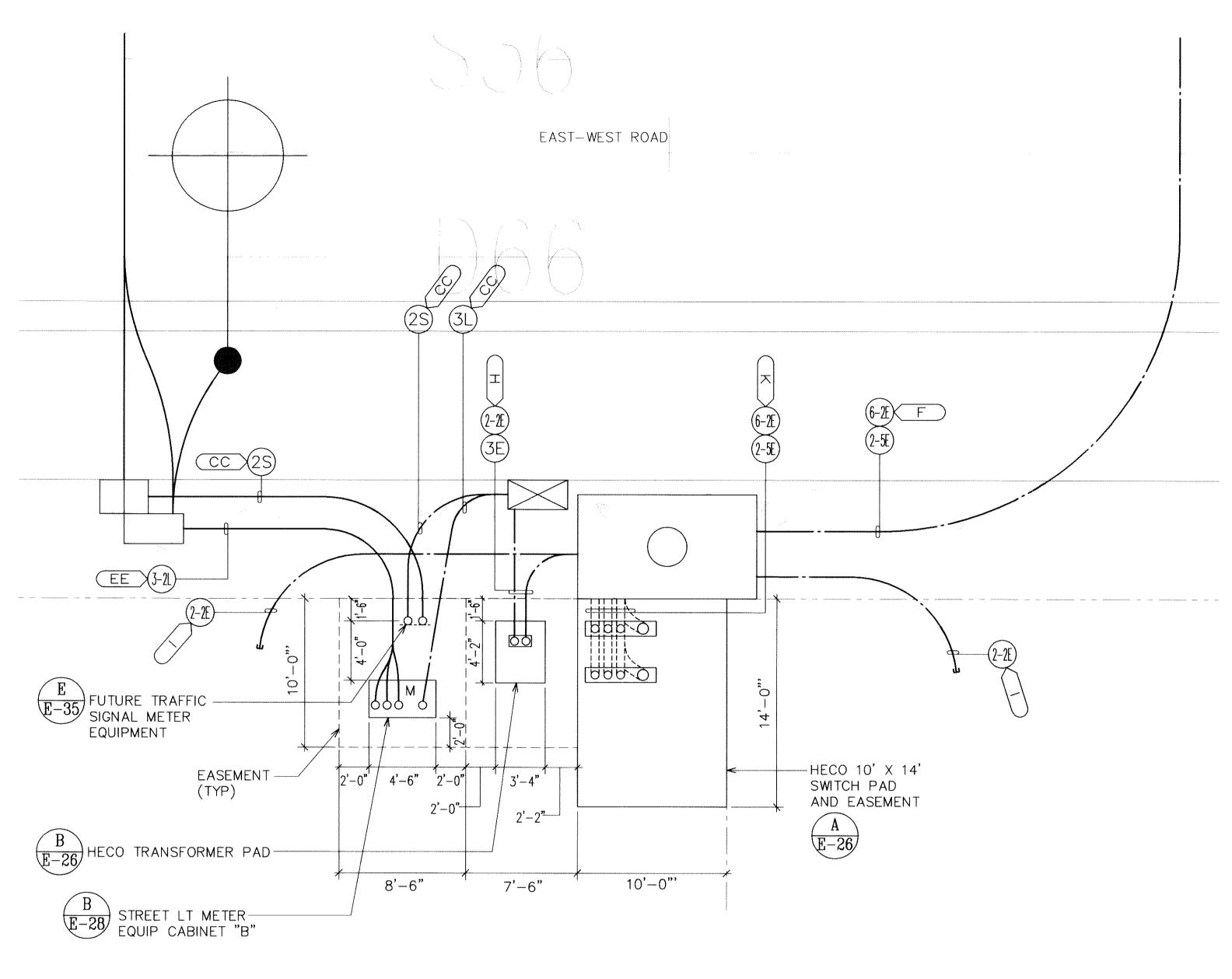
CHIEF, MECHANICAL/ELECTRICAL DIMISION, D.D.C. DATE

WILL BE UNDER MY OBSERVATION.

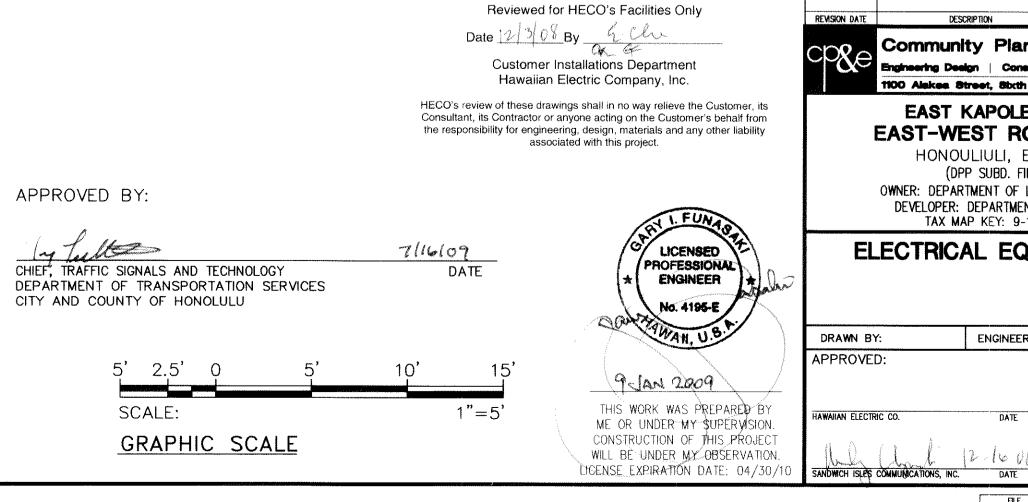
LICENSE EXPIRADIÓN DATE: 04/3











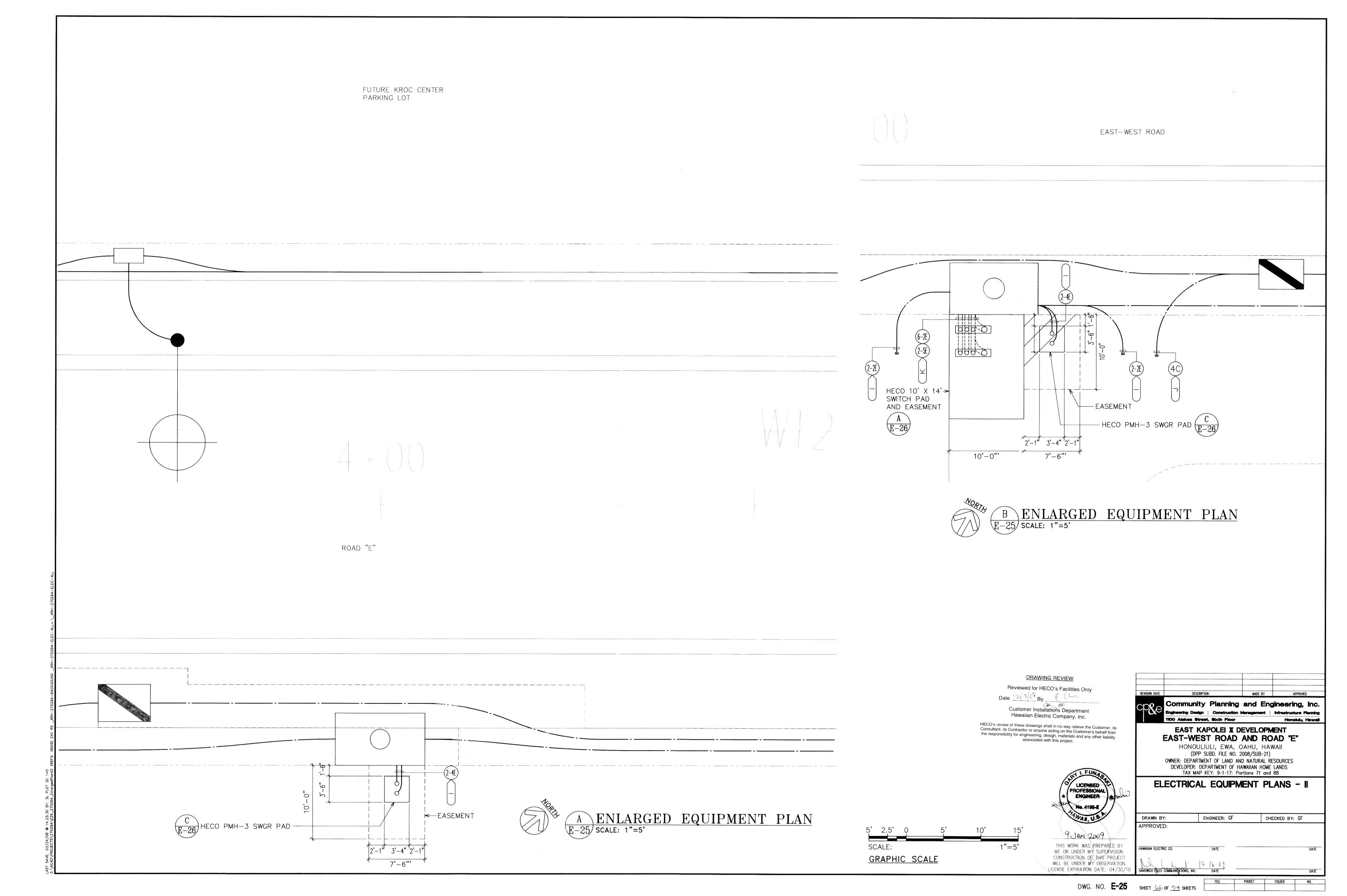
DRAWING REVIEW

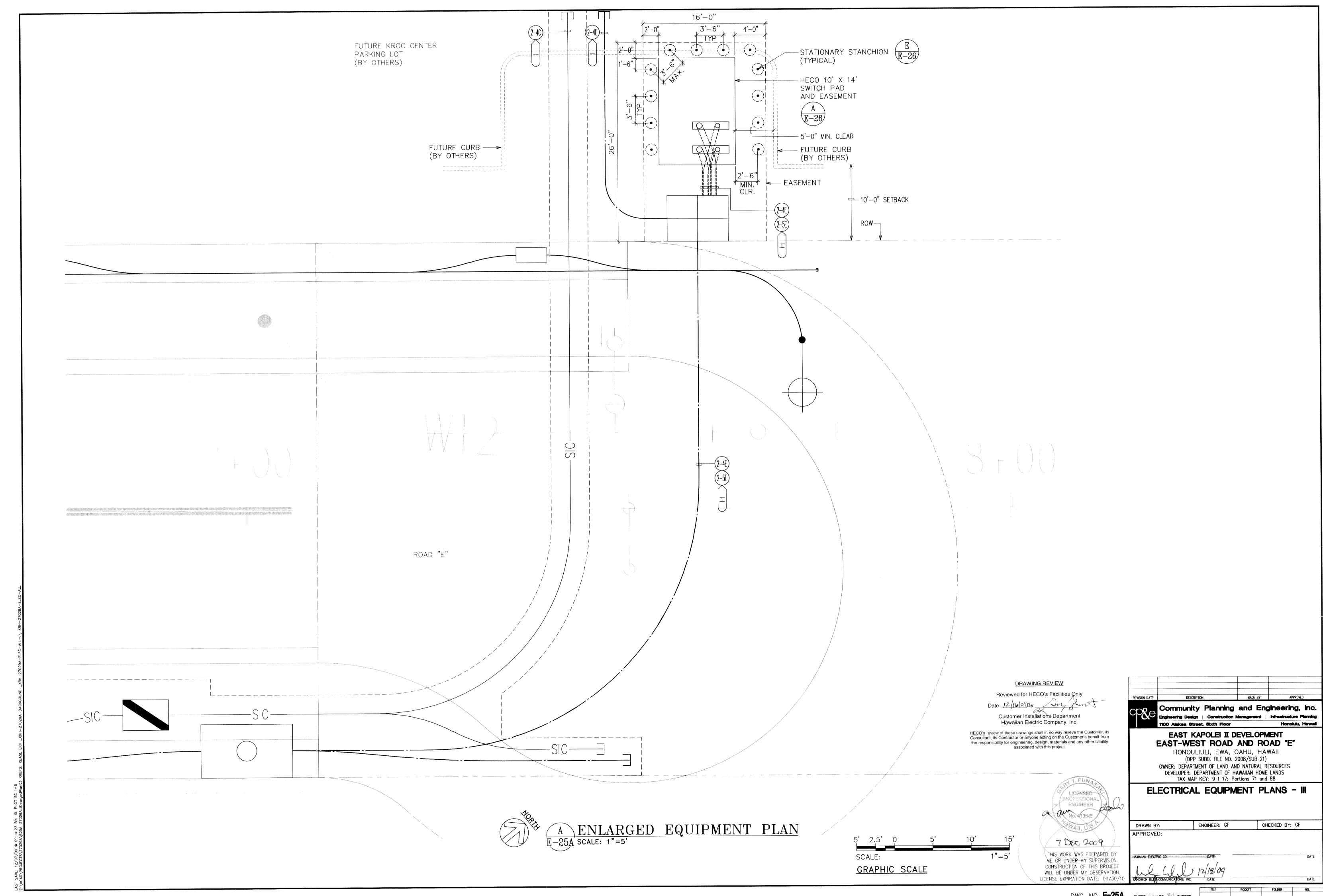
Community Planning and Engineering, Inc. 1100 Alakes Street, Sbith Floor EAST KAPOLEI II DEVELOPMENT EAST-WEST ROAD AND ROAD "E" HONOULIULI, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2008/SUB-21) OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portions 71 and 88

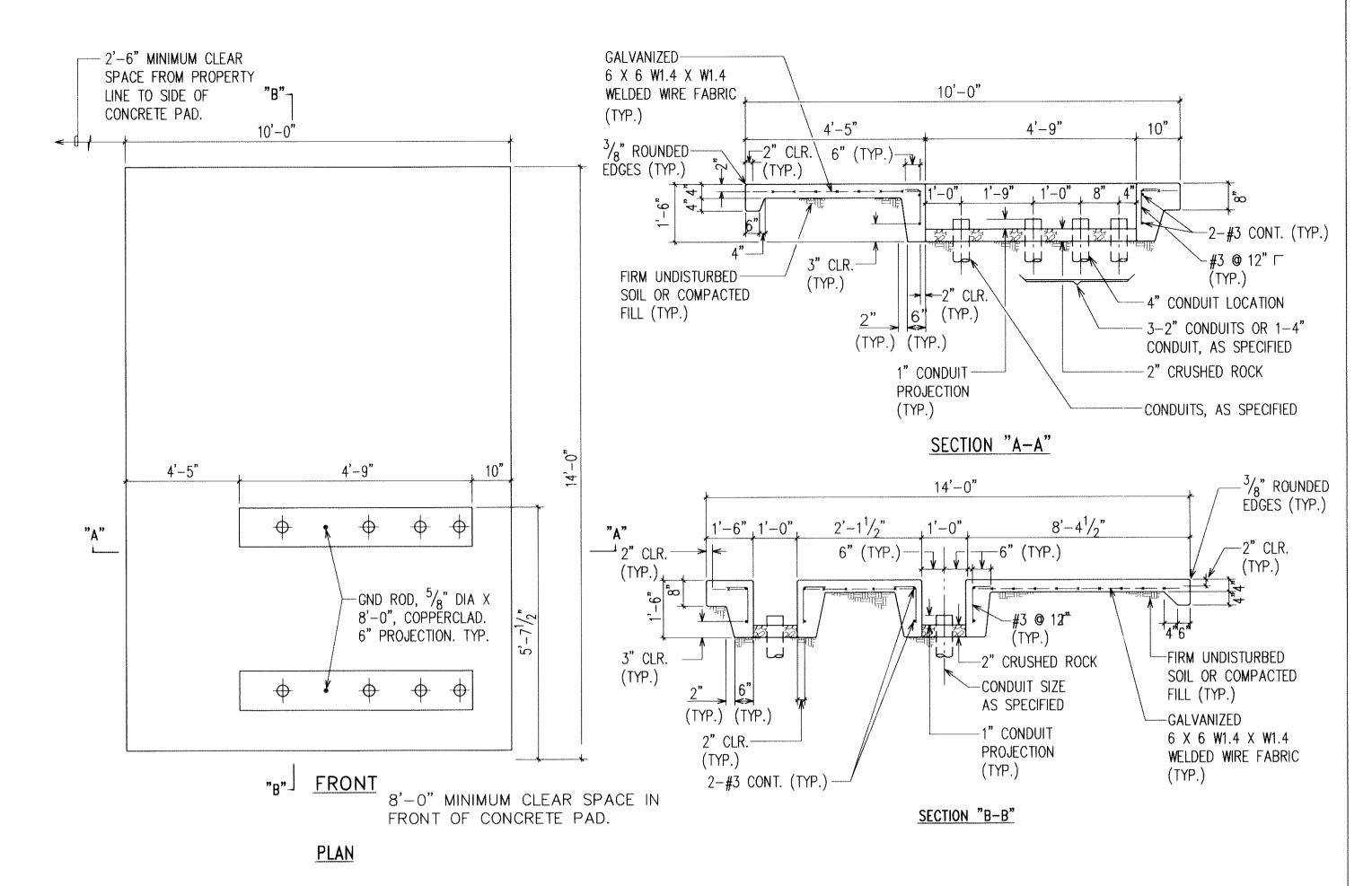
ELECTRICAL EQUIPMENT PLANS - I

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å	

DWG. NO. **E-24** SHEET <u>65</u> OF <u>94</u> SHEETS

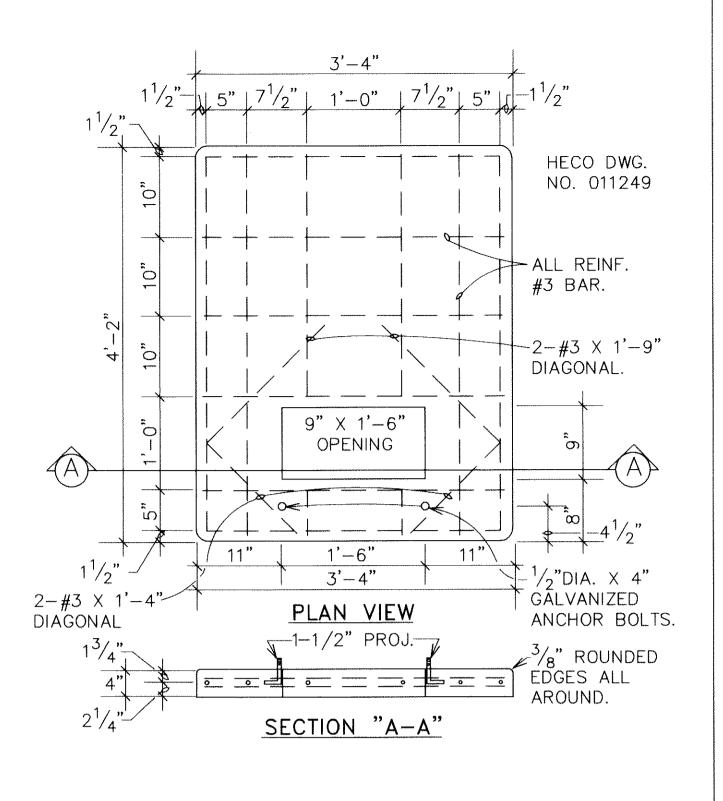






- 1. CONCRETE COMPRESSIVE STRENGTH: 3000 PSI 28 DAYS. HECO STD. SPECIFICATION CS7401.
- 2. REINFORCING: CLEAN AND NEW ROUND DEFORMED BARS (GR 40) AND GALVANIZED 6 X 6 W1.4 X W1.4 WELDED WIRE FABRIC.
- 3. TOP OF CONCRETE PAD TO BE SMOOTH AND TRUE. OTHER EXPOSED SURFACES TO BE SMOOTH AND FREE FROM DEFECTS.
- 4. CONSTRUCTION TO COMPLY WITH ACI 318 AS AMENDED.
- 5. WEIGHT OF SWITCHGEAR EQUALS 2,150 POUNDS.

A AUTOMATIC TRANSFER SWITCHING EQUIPMENT PAD E-26 NOT TO SCALE



NOTES:

- 1. COMPRESSIVE STRENGTH OF CONCRETE: 3000 PSI IN 28 DAYS.
- 2. REINFORCING ROUND DEFORMED BAR SHALL BE CLEAN & NEW.
- 3. CURE CONCRETE BY APPROVED METHOD.
- 4. TOP OF CONC. PAD TO BE SMOOTH, TRUE & LEVEL, FREE FROM DEFECTS.
- 5. CONTRACTOR HAS OPTION OF FURNISHING CAST-IN-PLACE OR PRECAST.

#3 @ 6"± O.C NOTES:

 CONCRETE COMPRESSION: 3000 PSI IN 28 DAYS REINFORCING: CLEAN AND NEW ROUND DEFORMED BARS

SECTION A - A

L / J

1'-9" (FRONT)

PLAN VIEW

 $1\frac{1}{2}$ " CLEAR-

 $\frac{5}{8}$ " × 8'-0"

COPPERCLAD

GROUND ROD

__ 4"C, TYP FOR 2

— 1" PROJ.

- CONSTRUCTION TO COMPLY WITH ACI 318 AS AMENDED
- 3. PAD TO BE SET ON FIRM UNDISTURBED GROUND OR COMPACTED FILL.

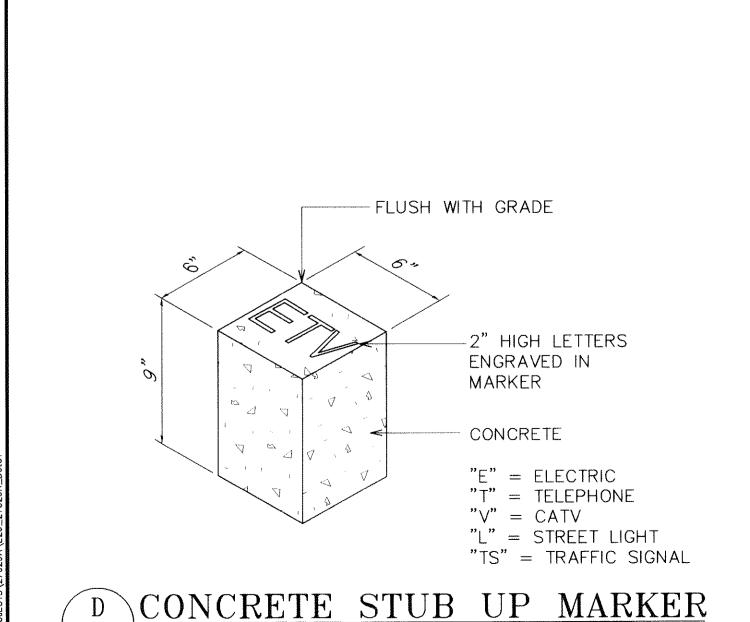
3'-4"

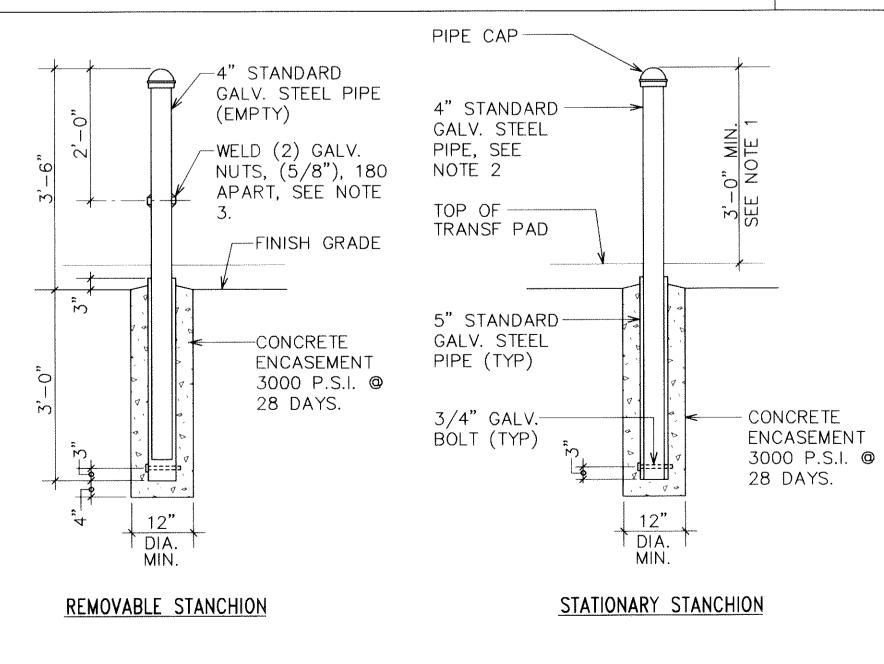
1'-8"

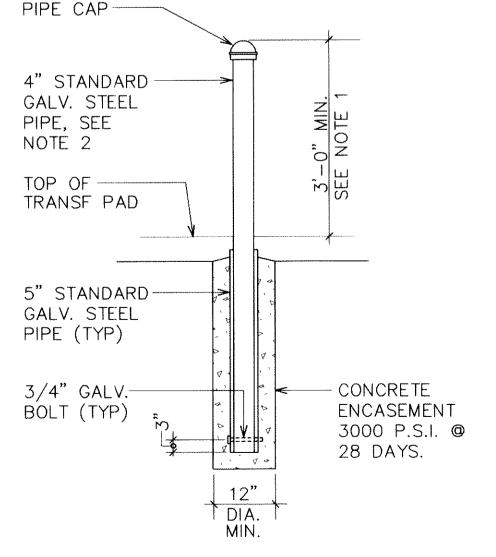
- TOP OF CONCRETE PAD TO BE SMOOTH AND TRUE AND FREE FROM DEFECTS. SIDEWALK FINISH AS PER C & C SPECIFICATIONS. ROUND ALL EXPOSED EDGES TO 3/8" RADIUS.
- 5. IF THE GROUND RESISTANCE IS MORE THAN 25 OHMS, INSTALL ADDITIONAL GROUND ROD OR GROUND WIRE.

B CONCRETE TRANSFORMER PAD DETAIL

C MANUAL SWITCHING EQUIPMENT PAD DETAIL E-26 NOT TO SCALE





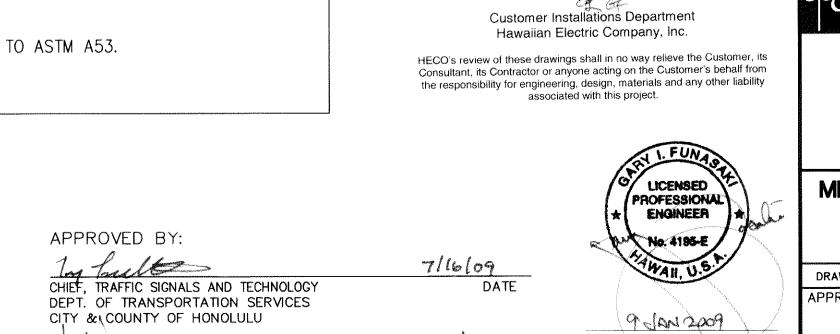


E STANCHION DETAIL E-26 NOT TO SCALE

NOTES:

NOT TO SCALE

- 1. ALL STANCHIONS SHALL BE INSTALLED AT SAME HEIGHT. ABOVE TOP OF CONCRETE EQUIPMENT PAD.
- 2. STATIONARY GALV. PIPE TO BE FILLED WITH CONCRETE TO WEIGH APPROXIMATELY 150 LBS.
- 3. WELDED NUTS ARE FOR SCREWING IN BOLTS TO ACT AS HANDLES FOR LIFTING REMOVABLE STANCHIONS. BOLT TO BE REMOVED AFTER INSTALLATION.
- 4. STANCHIONS SHALL BE PAINTED YELLOW PER ANSI SPEC. Z53.1 TO COMPLY WITH OSHA STANDARDS PER COLOR
- 5. STANCHION SHALL COMFORM TO ASTM A53.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

CONSTRUCTION OF THIS PROJECT

WILL BE UNDER MY OBSERVATION.

LICENSE EXPIRATION DATE: 04/30/1

DRAWING REVIEW

Reviewed for HECO's Facilities Only

REVISION DATE Community Planning and Engineering, Inc. 1100 Alakea Street, Sixth Floor EAST KAPOLEI II DEVELOPMENT

< 2" CLEAR

ANCHOR BOLT

LOCATION, TYP FOR 4

EAST-WEST ROAD AND ROAD "E" HONOULIULI, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2008/SUB-21) OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portions 71 and 88

MISCELLANEOUS DETAILS & SCHEDULES

DRAWN BY:	ENGINEER:	GF	CHECKE	ED BY: GF	
PPROVED:			*		
WAIIAN ELECTRIC CO.	DATE			, , ,	DATE
	12.16.08	41	1		
NOWCH ISLES COMMUNICATIONS,	, , , , , , , , , , , , , , , , , , ,	CHIEF, MECHANIC	AL/ELECTRICAL	NZ/24 DIVISION, D.D.C.	DATE

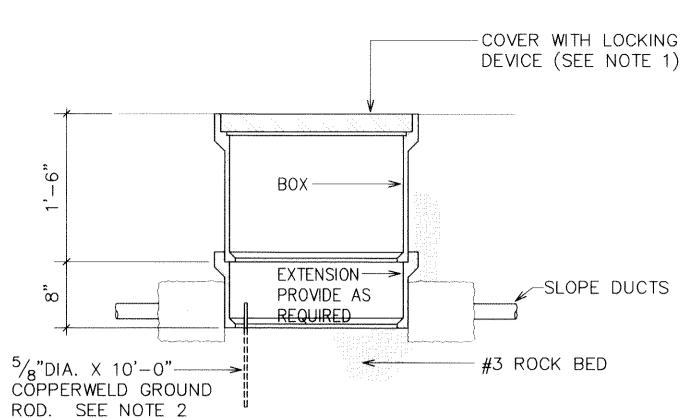
DWG. NO. **E-26** SHEET 67 OF 94 SHEETS

CITY & COUNTY OF HONOLULU

DEPT. OF PLANNING AND PERMITTING

CHIEF. TRAFFIC REVIEW BRANCH

E-26 NOT TO SCALE



ELEVATION

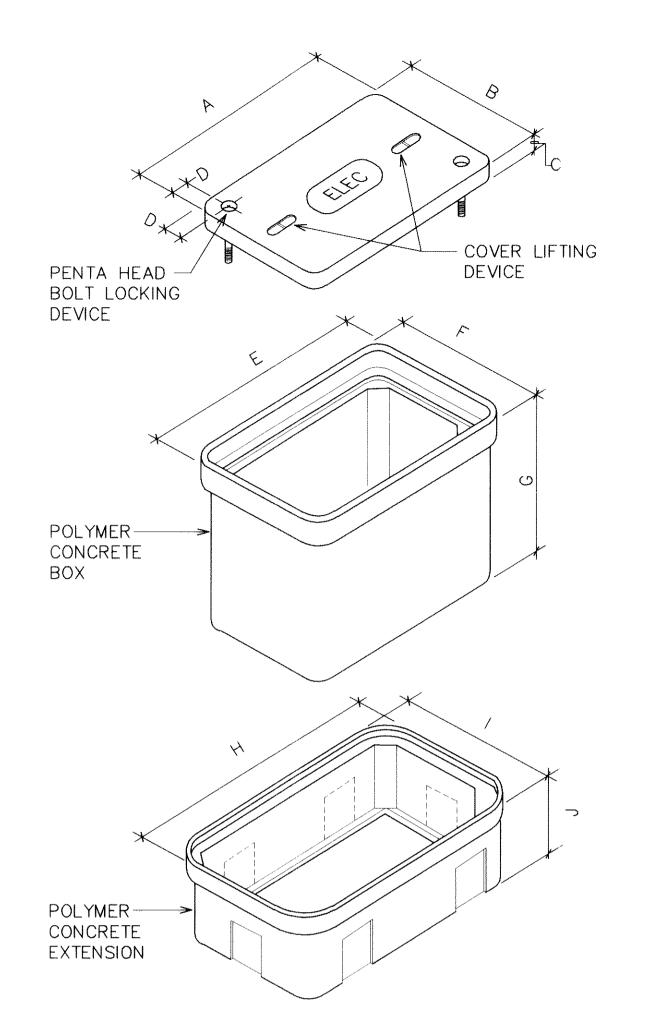
NOTES:

- 1. TO PROPERLY SECURE THE COVER, BE SURE THAT THE PENTAHEAD BOLTS ARE IN PLACE AND TIGHTENED. THE PENTA BOLTS SHALL BE FASTENED SECURELY TO THE COVERS (BY MEANS OF A COTTER PIN, FOR EXAMPLE), SO THE BOLTS CANNOT BE EASILY REMOVED FROM THE COVERS, EVEN WHEN THE COVERS ARE REMOVED FROM THE BOXES.
- 2. GROUND ROD SHALL BE INSTALLED IN THE CORNER, 6" FROM EACH WALL AND 6" ABOVE FINAL FLOOR GRADE.
- 3. NON-CONCRETE BOXES, COVERS, AND EXTENSIONS SHALL BE RATED FOR A VERTICAL LOAD OF 20,000 LBS (20K) MINIMUM.

NON-CONCRETE BOX SCHEDULE							
ITEM	13" X 24" PULLBOX	17" X 30" PULLBOX	24" X 36" PULLBOX				
A	231/4	$30\frac{1}{2}$	35 ⁵ / ₈				
В	13 ³ / ₄	$17^{1}/_{2}$	24				
С	2	2	3				
D	13/4	21/2	23/4				
E	$24^{1}/_{2}$	31 ³ / ₄	36 ⁷ / ₈				
F	15	18 ³ / ₄	25 ¹ / ₄				
G	18	18	18				
Н	291/4	$36^{1}/_{2}$	41 7/8				
l	19 ³ / ₄	$23^{1}/_{2}$	301/4				
J	9	9	9				

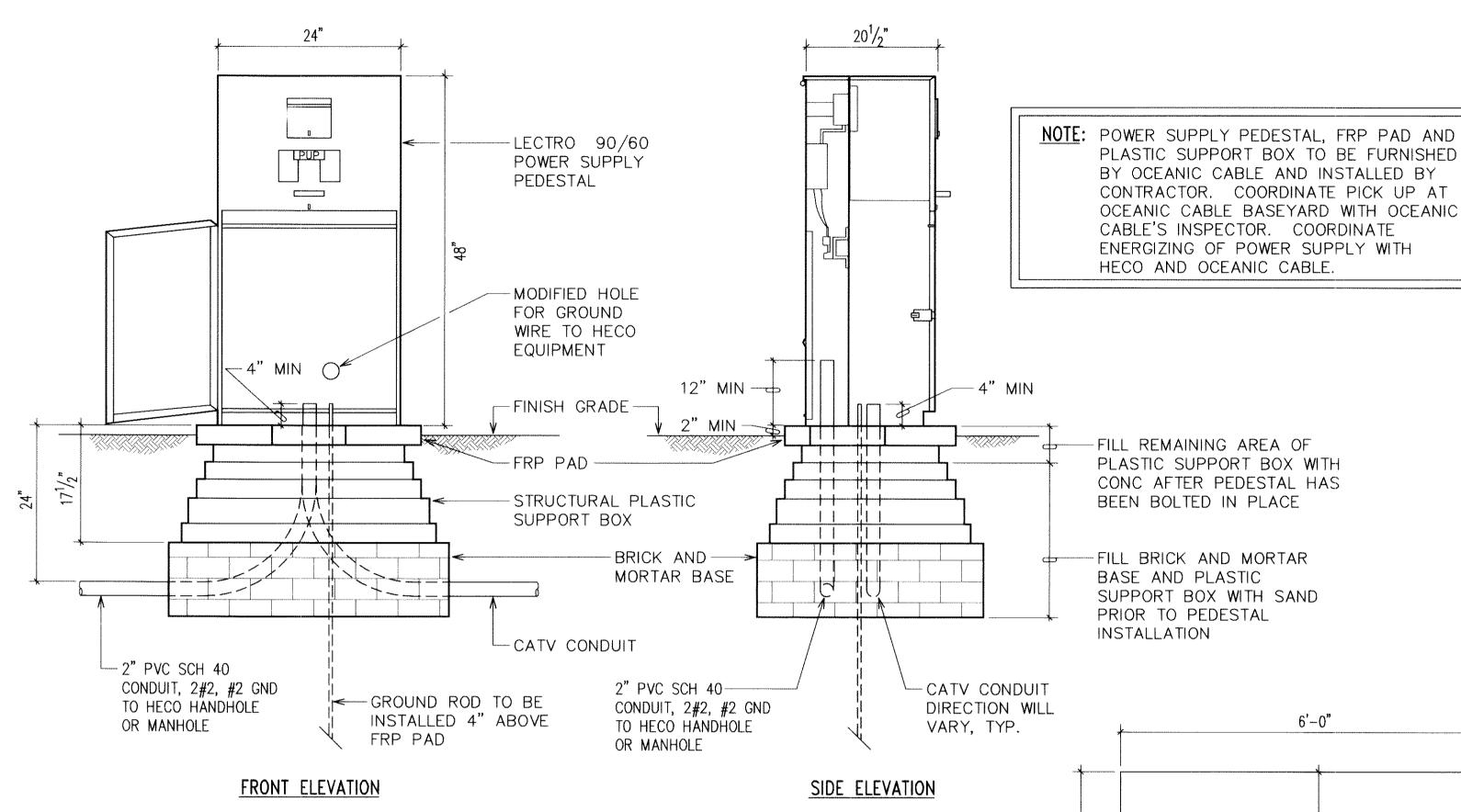
NOTE: ALL DIMENSIONS ARE IN INCHES & ARE NOMINAL.

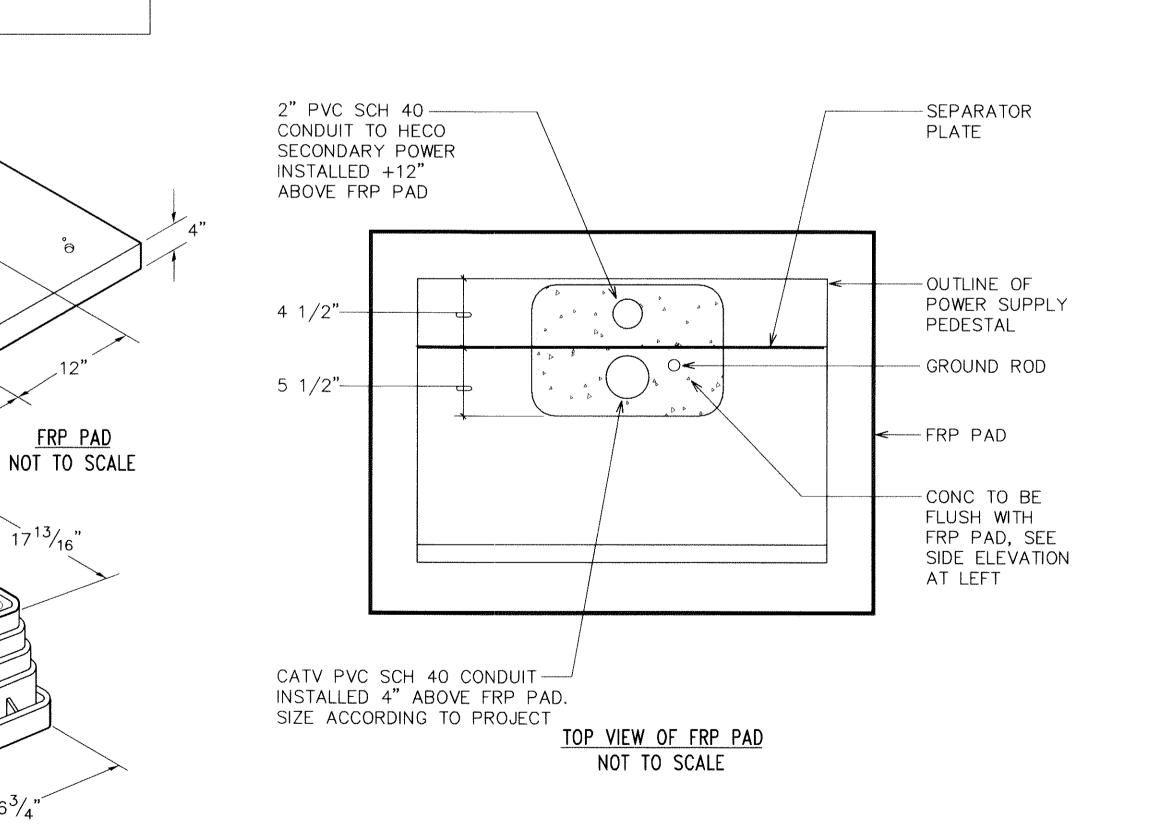




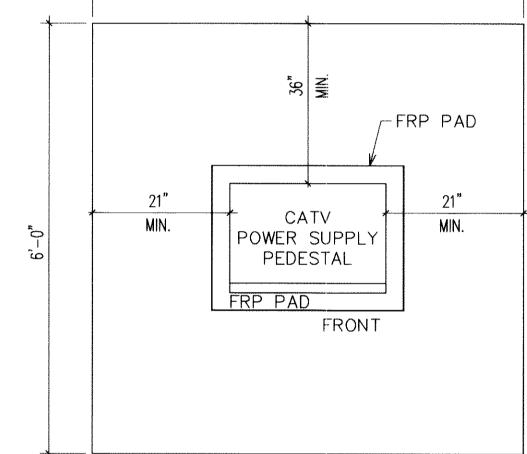
STRUCTURAL PLASTIC SUPPORT BOX

NOT TO SCALE





B CATY POWER SUPPLY PEDESTAL DETAILS E-27 NOT TO SCALE

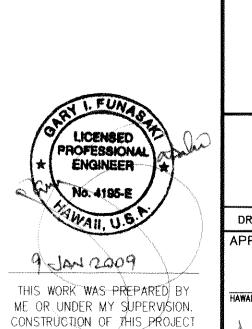


6'-0"

CATV 6'-0" X 6'-0" EASEMENT

EASEMENT SITE PLAN NOT TO SCALE

1100 Alakea Street, Sixth Floor



WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/1

EAST KAPOLEI II DEVELOPMENT EAST-WEST ROAD AND ROAD "E" HONOULIULI, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2008/SUB-21)

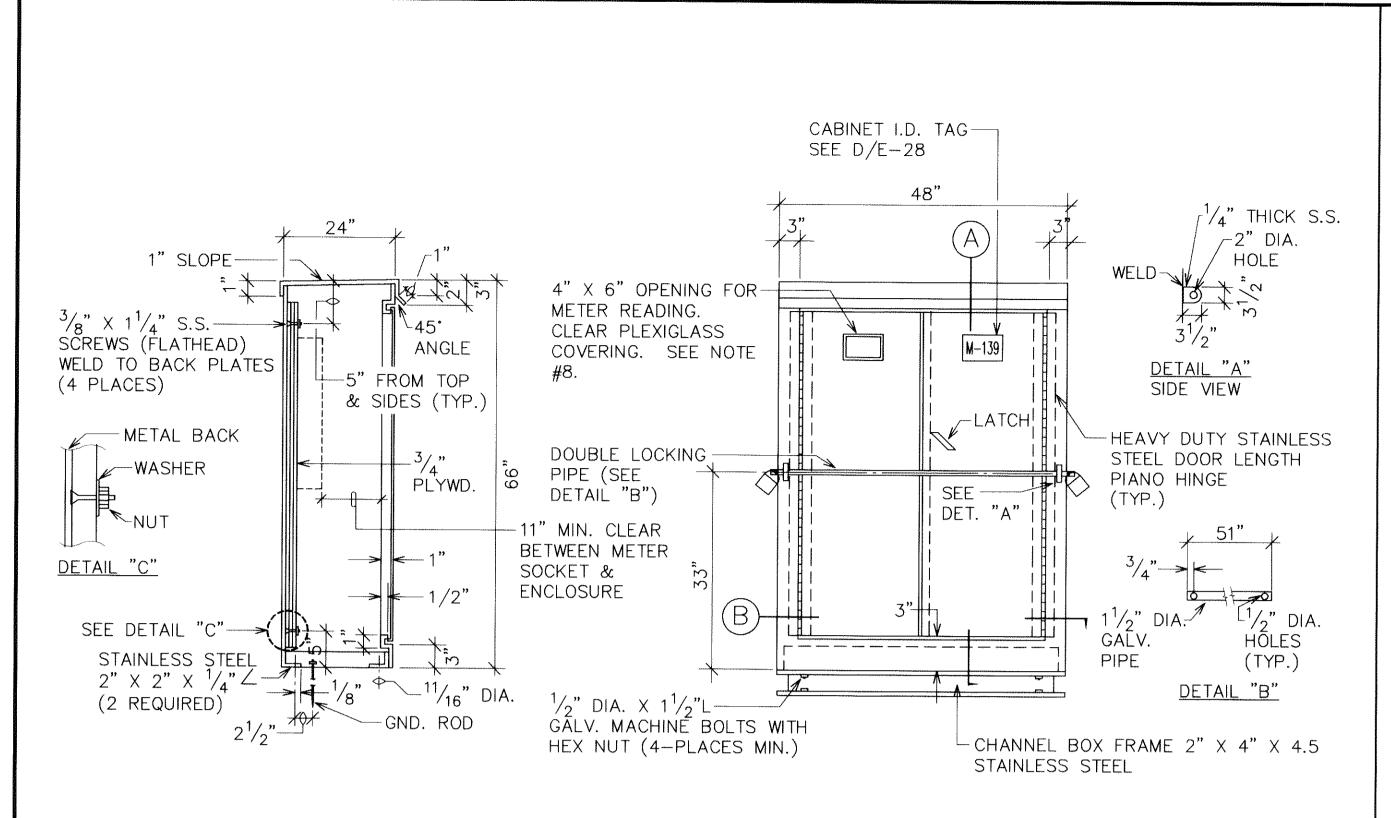
Community Planning and Engineering, Inc.

OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portions 71 and 88

CATV POWER SUPPLY & **PULLBOX DETAILS**

DRAWN BY:	ENGINEER: GF	CHECKED BY: GF
APPROVED:		
XI/S-		
HAWAIIAN ELECTRIC CO.	DATE	DATI
Mhh	12-16-08	
SANDWICH ISTES COMMUNICATIONS,	INC. DATE	DATI

DWG. NO. **E-27** SHEET 68 OF 94 SHEETS

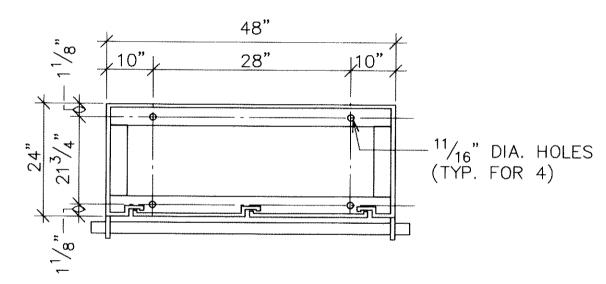


SECTION "A"

ELEVATION

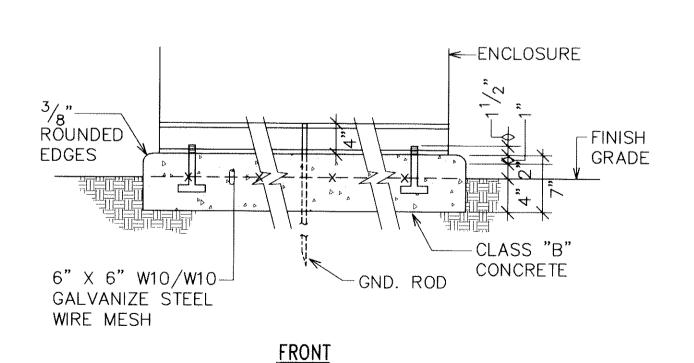
NOTES:

- 1. CABINET TO BE PRIMED WITH ONE COAT SHOP PRIMER.
- 2. PLYWOOD TO BE $\frac{3}{4}$ " THICK (MIN.) TERMITE TREATED PLYWOOD. (EXTERIOR GRADE)
- 3. MADE FROM 10 GAUGE TYPE 316 STAINLESS SHEEL.
- 4. PROVIDE ACRYLIC ENAMEL FINISH, COLOR TO MATCH TRANS-FORMER. (2 COATS)
- 5. ENCLOSURE SHALL BE NEMA 3R WITH NEOPRENE GASKETING. 6. PADLOCKS:
 - 1 HECO FURNISHED
 - 1 CONTRACTOR FURNISHED, BRASS CORBIN SESAMEE COMBINATION
- SHOP FABRICATION DRAWINGS SHALL BE SUBMITTED FOR
- 8. LOCATION OF OPENING FOR METER READER TO CORRESPOND WITH LOCATION OF METER (CENTER OPENING WITH METER SOCKET).
- 9. MAINTAIN 4'-0" MIN. CLEARANCE FRONTING CABINET DOOR, UNLESS INDICATED OTHERWISE.



SECTION "B" (STAINLESS STEEL ANGLE FRAME)

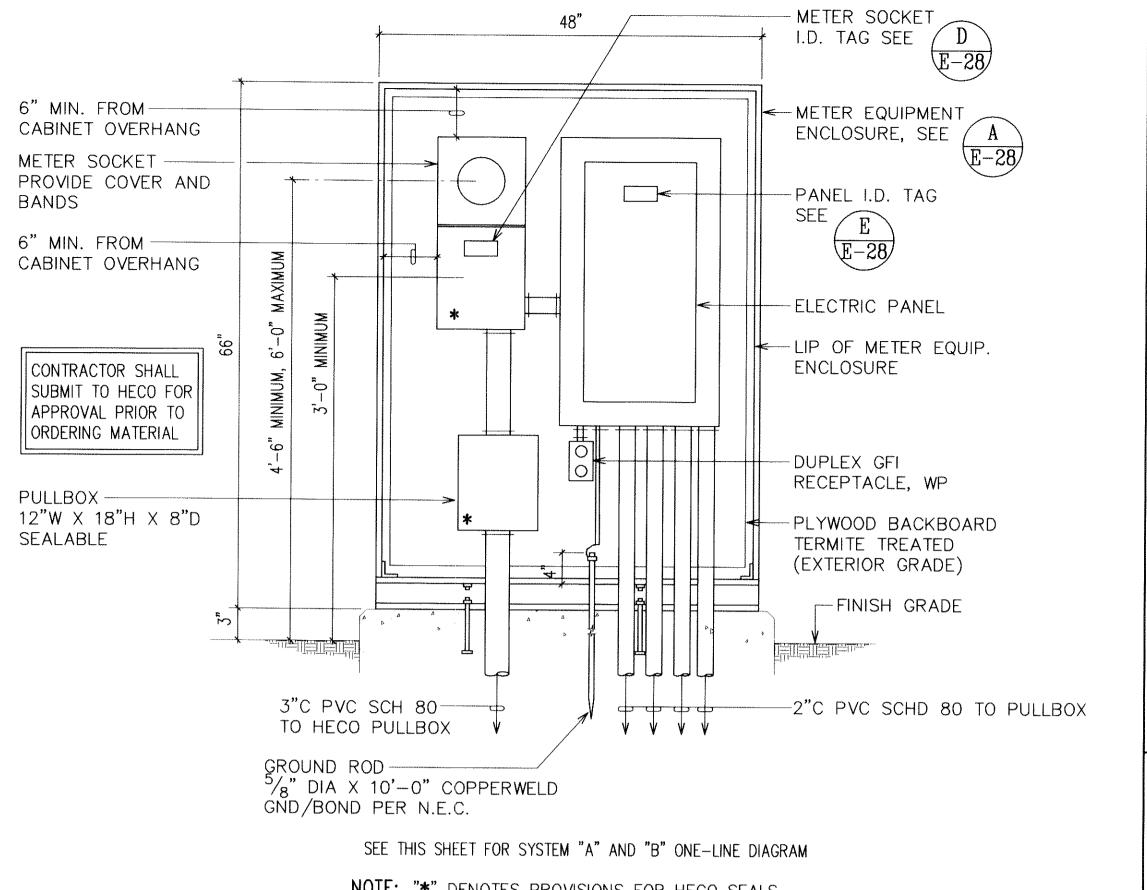
<u>PLAN</u>



 $\frac{5}{8}$ DIA. X 10"-0" $\frac{2^{1}/2}{2}$ 241/4" $54^{1}/_{4}$ " $\frac{5}{8}$ "DIA. X 6" ANCHOR BOLTS. 58" 4 TOTAL (GALV.)

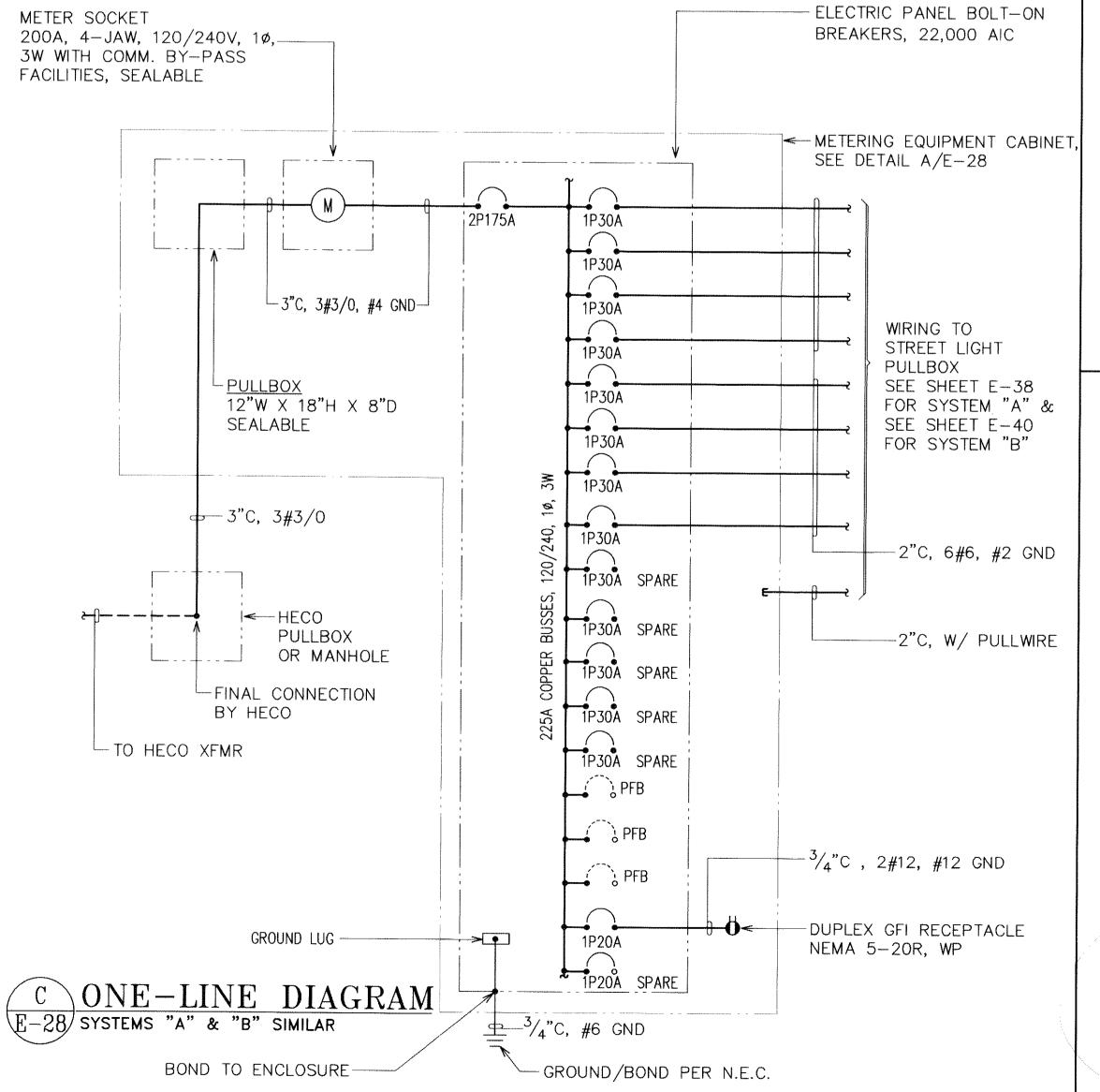
CONCRETE PAD

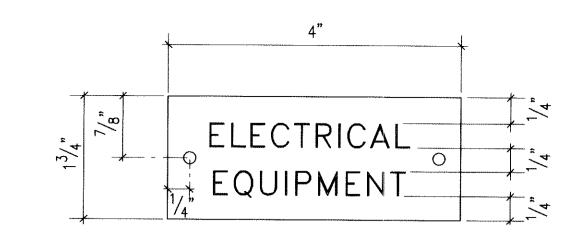
METERING EQUIPMENT CABINET E-28 NOT TO SCALE



NOTE: "*" DENOTES PROVISIONS FOR HECO SEALS.

ELECTRICAL METERING EQUIPMENT ELEVATION E-28 NOT TO SCALE

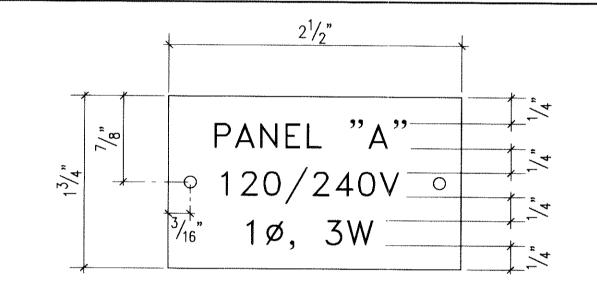




NOTES:

- 1. USE 2 PLY PLASTIC BLACK, WHITE.
- 2. LETTER SIZE SHALL BE $^{1}\!/_{2}$ " HIGH AND ENGRAVED $^{1}\!/_{16}$ " WIDE, WHITE IN COLOR.
- 3. ATTACH TO EQUIPMENT ENCLOSURE WITH NO.7 STAINLESS STEEL DRIVE SCREWS.
- 4. CABINET I.D. TAG: CITY ST. LT. CABINET NUMBER. METER SOCKET: "STREET LIGHTS".

E-28 ELEC EQUIP I.D. TAG



NOTES:

- 1. USE 2 PLY PLASTIC BLACK, WHITE.
- 2. LETTER SIZE SHALL BE $\frac{1}{2}$ " HIGH AND ENGRAVED $\frac{1}{16}$ " WIDE, WHITE IN COLOR.
- 3. ATTACH TO EQUIPMENT ENCLOSURE WITH NO.7 STAINLESS STEEL DRIVE SCREWS.

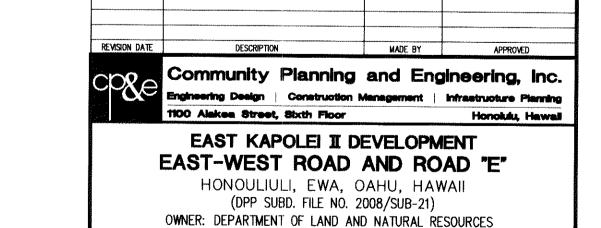
E-28 TYP PANEL I.D. TAG DETAIL NOT TO SCALE

DRAWING REVIEW

Reviewed for HECO's Facilities only Customer Installations Department

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability

Hawaiian Electric Company, Inc.



TAX MAP KEY: 9-1-17: Portions 71 and 88 METERING EQUIPMENT **CABINET & DETAILS**

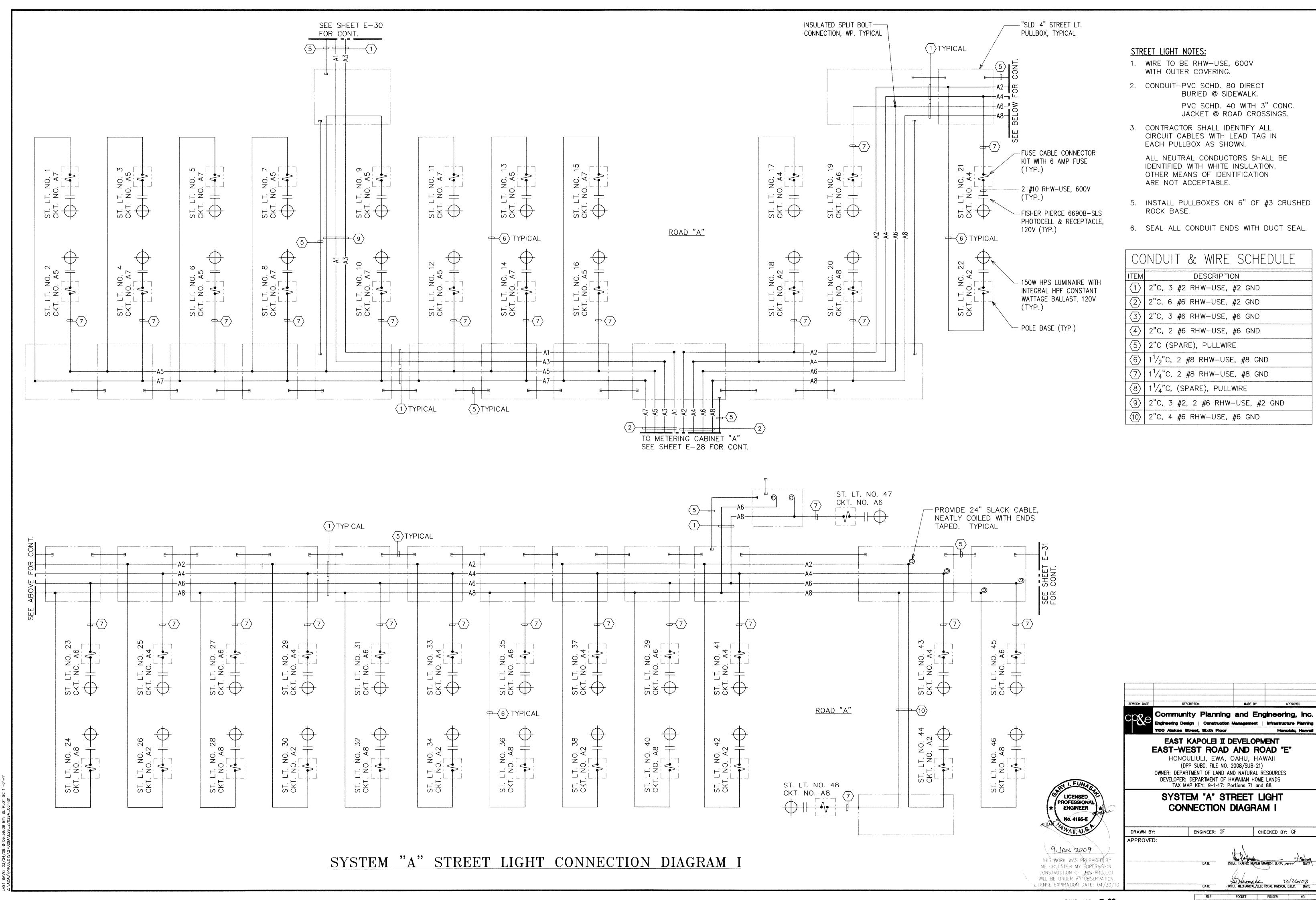
DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS

DRAWN BY: ENGINEER: GF CHECKED BY: GF APPROVED: THIS WORK WAS PREPARED BY AWAIIAN ELECTRIC CO. ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. CHEF, MECHANICAL PLECTRICAL DIVISION, D.D.C. DATE LICENSE EXPIRATION DATE: 04/30.

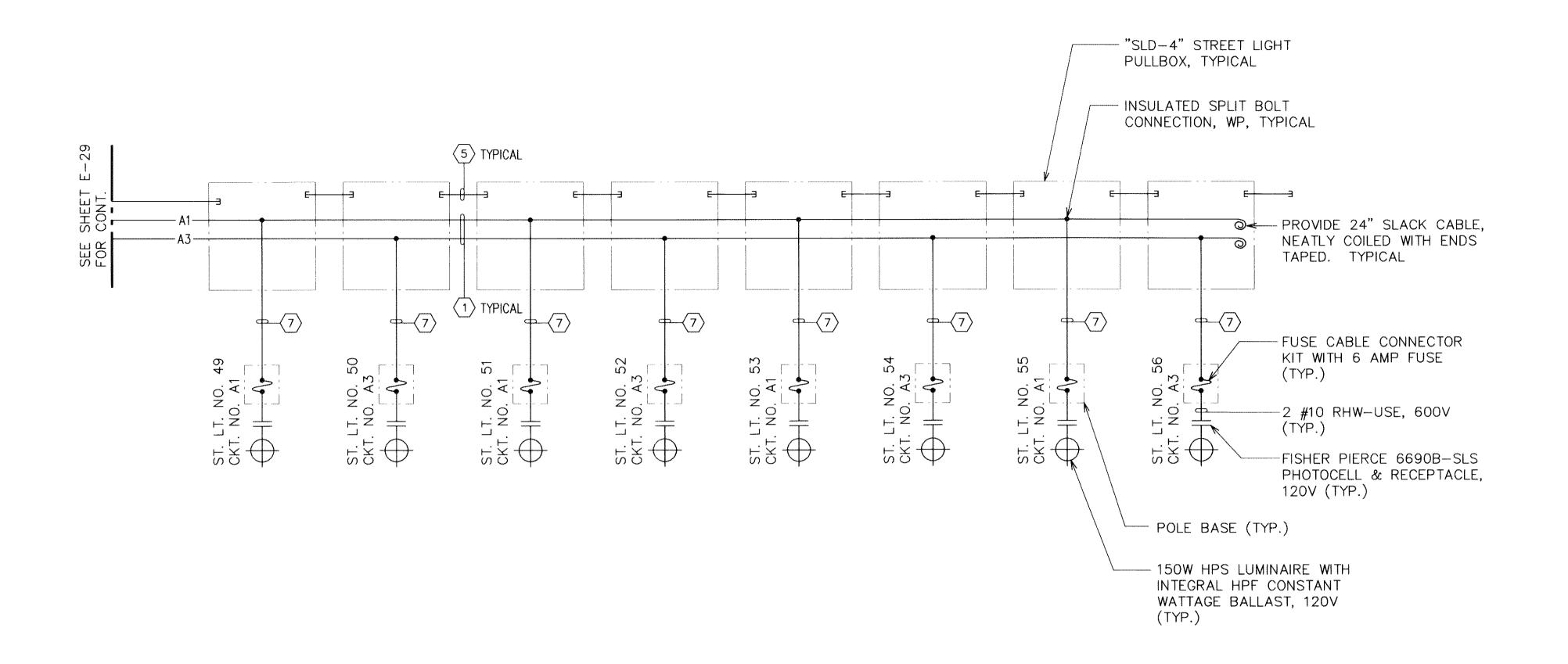
LICENSED PROFESSIONAL

ENGINEER

9 JAN DAO 9



DWG. NO. **E-29** SHEET <u>70</u> OF <u>94</u> SHEETS



SYSTEM "A" STREET LIGHT CONNECTION DIAGRAM II

STREET LIGHT NOTES:

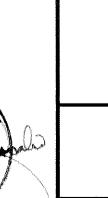
- 1. WIRE TO BE RHW-USE, 600V WITH OUTER COVERING.
- 2. CONDUIT-PVC SCHD. 80 DIRECT
 BURIED @ SIDEWALK.

 PVC SCHD. 40 WITH 3" CONC.
 JACKET @ ROAD CROSSINGS.
- 3. CONTRACTOR SHALL IDENTIFY ALL CIRCUIT CABLES WITH LEAD TAG IN EACH PULLBOX AS SHOWN.

ALL NEUTRAL CONDUCTORS SHALL BE IDENTIFIED WITH WHITE INSULATION. OTHER MEANS OF IDENTIFICATION ARE NOT ACCEPTABLE.

- 5. INSTALL PULLBOXES ON 6" OF #3 CRUSHED ROCK BASE.
- 6. SEAL ALL CONDUIT ENDS WITH DUCT SEAL.

CC	NDUIT & WIRE SCHEDULE				
ITEM	DESCRIPTION				
$\langle 1 \rangle$	2"C, 3 #2 RHW-USE, #2 GND				
2	2"C, 6 #6 RHW-USE, #2 GND				
(3)	2"C, 3 #6 RHW-USE, #6 GND				
4	2"C, 2 #6 RHW-USE, #6 GND				
(5)	2"C (SPARE), PULLWIRE				
6	$1\frac{1}{2}$ C, 2 #8 RHW-USE, #8 GND				
7	$1^{1}/_{4}$ "C, 2 #8 RHW—USE, #8 GND				
(8)	1 ¹ / ₄ "C, (SPARE), PULLWIRE				
(9)	2"C, 3 #2, 2 #6 RHW-USE, #2 GND				
(10)	2"C, 4 #6 RHW-USE, #6 GND				



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ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/10

LICENSED PROFESSIONAL

REVISION DATE

DESCRIPTION

MADE BY

APPROVED

COMMUNITY Planning and Engineering, Inc.
Engineering Deelgn | Construction Management | Infrastructure Planning
1100 Alakea Street, Sixth Floor Honolda, Hawaii

EAST KAPOLEI II DEVELOPMENT
EAST—WEST ROAD AND ROAD "E"

HONOULIULI, EWA, OAHU, HAWAII

(DPP SUBD. FILE NO. 2008/SUB-21)

OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES
DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portions 71 and 88

SYSTEM "A" STREET LIGHT CONNECTION DIAGRAM II

DRAWN BY:

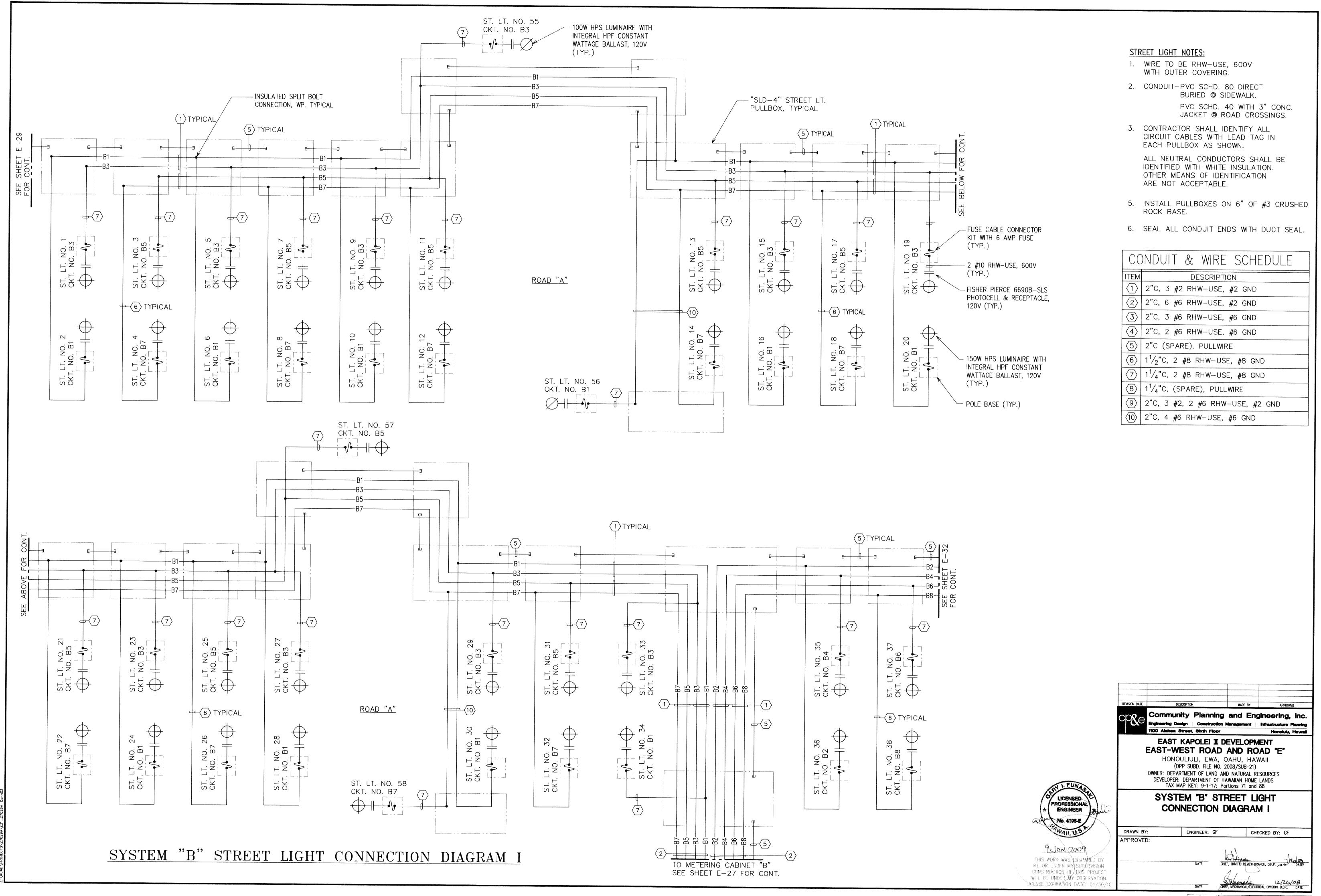
ENGINEER: GF

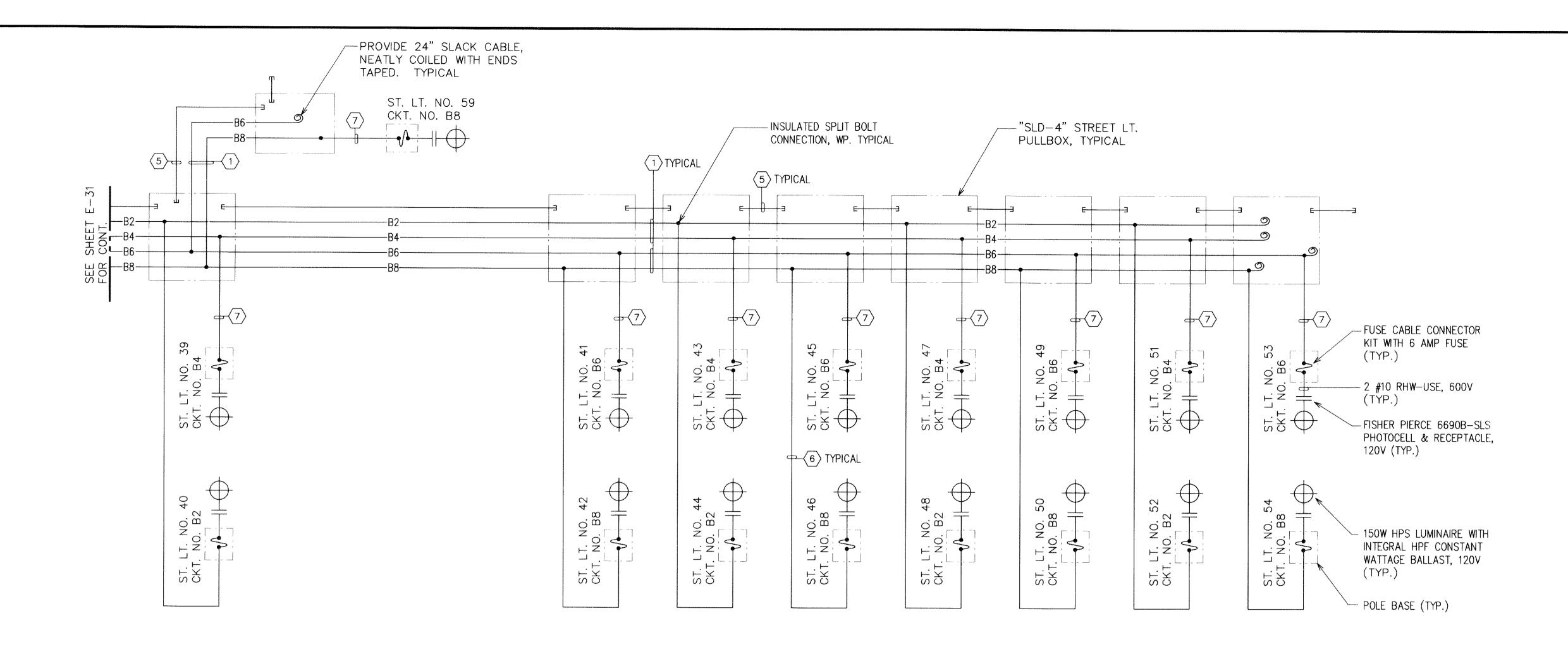
CHECKED BY: GF

APPROVED:

DATE

CHIEF, TRAFFIC REVIEW-BRANCH, D.P.P.



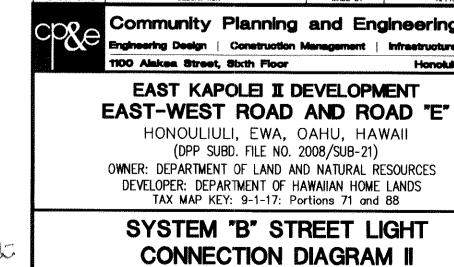


SYSTEM "B" STREET LIGHT CONNECTION DIAGRAM II

STREET LIGHT NOTES:

- 1. WIRE TO BE RHW-USE, 600V WITH OUTER COVERING.
- CONDUIT-PVC SCHD. 80 DIRECT BURIED @ SIDEWALK.
 PVC SCHD. 40 WITH 3" CONC. JACKET @ ROAD CROSSINGS.
- CONTRACTOR SHALL IDENTIFY ALL CIRCUIT CABLES WITH LEAD TAG IN EACH PULLBOX AS SHOWN.
 - ALL NEUTRAL CONDUCTORS SHALL BE IDENTIFIED WITH WHITE INSULATION. OTHER MEANS OF IDENTIFICATION ARE NOT ACCEPTABLE.
- 5. INSTALL PULLBOXES ON 6" OF #3 CRUSHED ROCK BASE.
- 6. SEAL ALL CONDUIT ENDS WITH DUCT SEAL.

CC	NDUIT & WIRE SCHEDULE
ITEM	DESCRIPTION
1	2"C, 3 #2 RHW-USE, #2 GND
(2)	2"C, 6 #6 RHW-USE, #2 GND
(3)	2"C, 3 #6 RHW-USE, #6 GND
4	2"C, 2 #6 RHW-USE, #6 GND
(5)	2"C (SPARE), PULLWIRE
6	$1^{1}/_{2}$ "C, 2 #8 RHW-USE, #8 GND
(7)	$1^{1}/_{4}$ "C, 2 #8 RHW-USE, #8 GND
(8)	1 ¹ / ₄ "C, (SPARE), PULLWIRE
9	2"C, 3 #2, 2 #6 RHW-USE, #2 GND
(10)	2"C, 4 #6 RHW-USE, #6 GND



DRAWN BY:

ENGINEER: GF

CHECKED BY: GF

APPROVED:

DATE

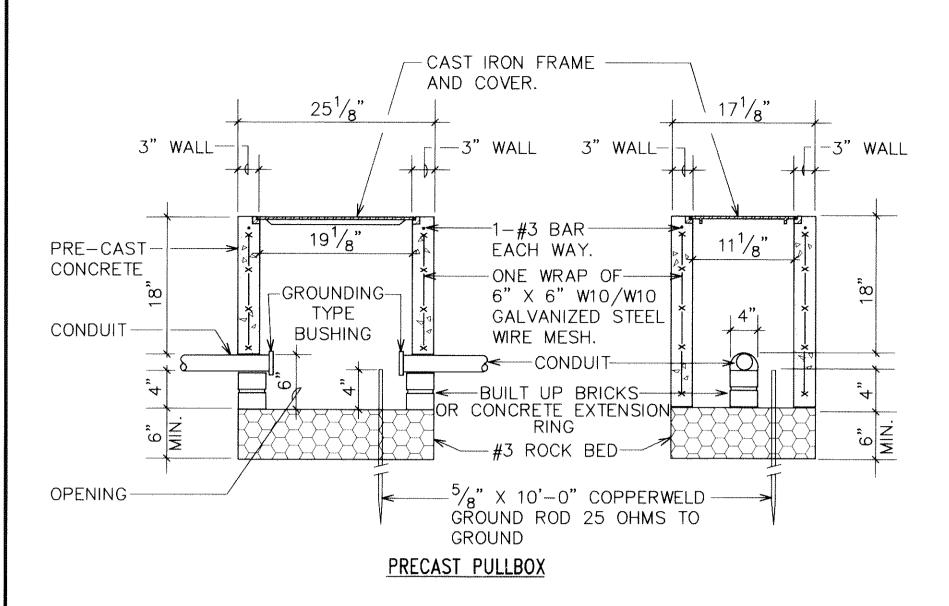
CHIEF, TRAFFIC REVIEW BRANCH, D.P.P.

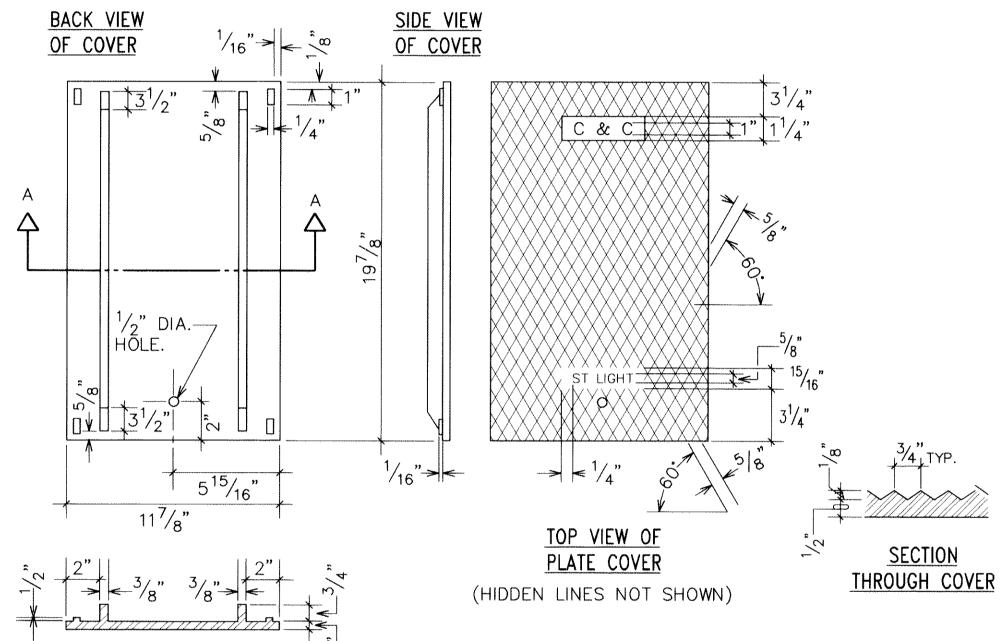
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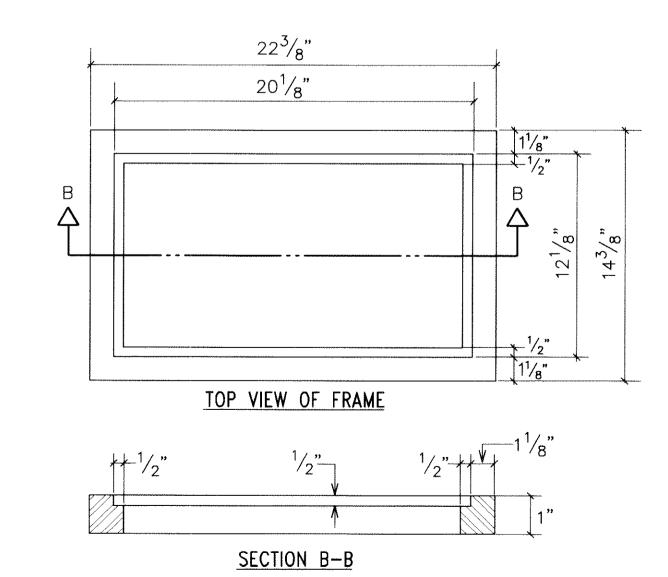
12/26/08

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VL OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/10

LICENSED PROFESSIONAL

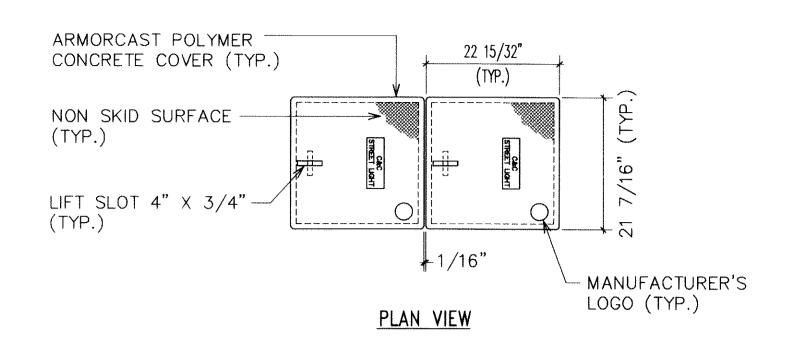


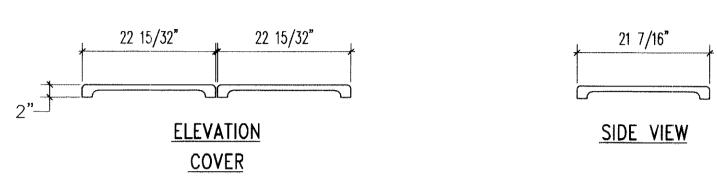




SECTION A-A

A SLD-1 STREET LIGHT PULLBOX DETAIL NOT TO SCALE





NOTES:

- SUBMIT SHOP DRAWING FOR APPROVAL BEFORE PURCHASING POLYMER CONCRETE COVERS.
- CONCRETE COVERS.

 2. TYPICAL 435TB PULLBOX, REFER TO HTCO STANDARD DRAWING #34056.

 PRECAST CONCRETE PULLBOX FOR 435TB

 BRICKS AS REQUIRED TO OBTAIN MINIMUM DEPTH AS REQUIRED.

 CONDUIT AS INDICATED ON PLAN

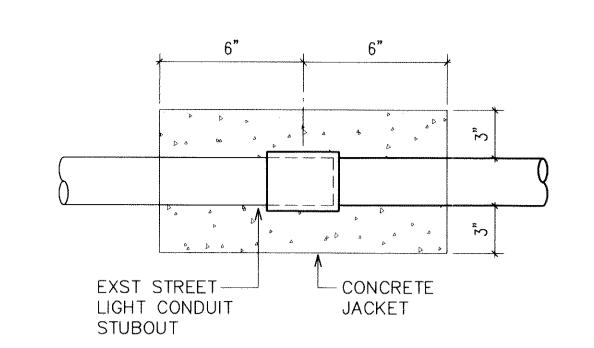
B STREET LIGHT PULLBOX "SLD-4" NOT TO SCALE

COVER NOTES:

- SIDES OF COVER ARE SLIGHTLY BEVELED TO FACILITATE INSTALLATION. BEVEL IS INWARD FROM TOP TO BOTTOM.
- 2. TO BE CAST FROM GREY IRON.
- 3. TOP OF COVER MUST BE FLUSH WITH FRAME. TO ENSURE PROPER FIT, GRIND SIDES OF COVER AS REQUIRED AND PAINT WITH BLACK ASPHALT PAINT.
- 4. COVER SHALL HAVE A CLEAN RUST— FREE APPEARANCE. COVER SHALL BE PAINTED WITH BLACK ASPHALT PAINT IF REQUIRED BY THE C&C STREET LIGHT INSPECTOR.
- 5. BOTTOM OF COVER SHALL BE FREE OF SHARP METAL EDGES OR BURRS.

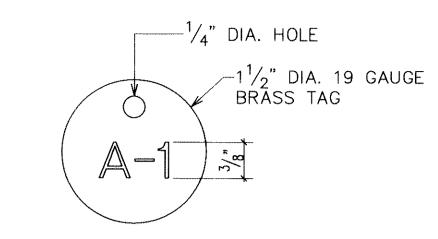
PULLBOX NOTES:

- CONCRETE EXTENSION RING, AS APPROVED BY C&C STREET LIGHT INSPECTOR, MAY BE SUBSTITUTED FOR BRICKS.
- 2. SUBMIT SHOP DRAWING FOR BOX, FRAME AND COVER FOR MATERIAL APPROVAL. INCLUDE CONCRETE EXTENSION RING IN SUBMITTAL IF SUBSTITUTED FOR BRICKS.
- 3. SEAL CAST IRON FRAME TO CONCRETE PULLBOX WITH EPOXY RESIN IF REQUIRED BY C&C STREET LIGHT INSPECTOR.
- 4. DUCT SEAL CONDUIT AFTER INSTALLATION OF WIRES.



TYP CONNECTION TO EXST CONDUIT STUBOUT DETAIL

NOT TO SCALE



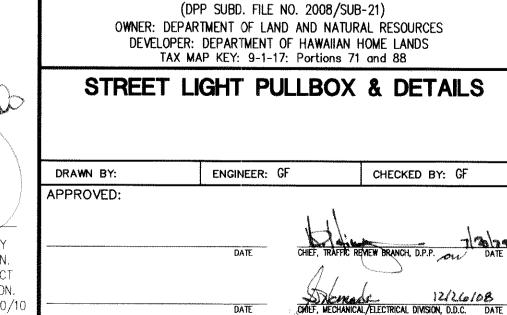
NOTES:

- 1. NUMBER SIZE SHALL BE $\frac{3}{8}$ " HIGH AND PUNCHED ON BRASS TAG.
- 2. ATTACH TO CIRCUIT CABLES WITH NYLON WEATHER RESISTANT LOCKING CABLE TIES, $\frac{3}{16}$ " WIDE.

D STREET LIGHT CIRCUIT CABLE I.D. TAG DETAIL NOT TO SCALE



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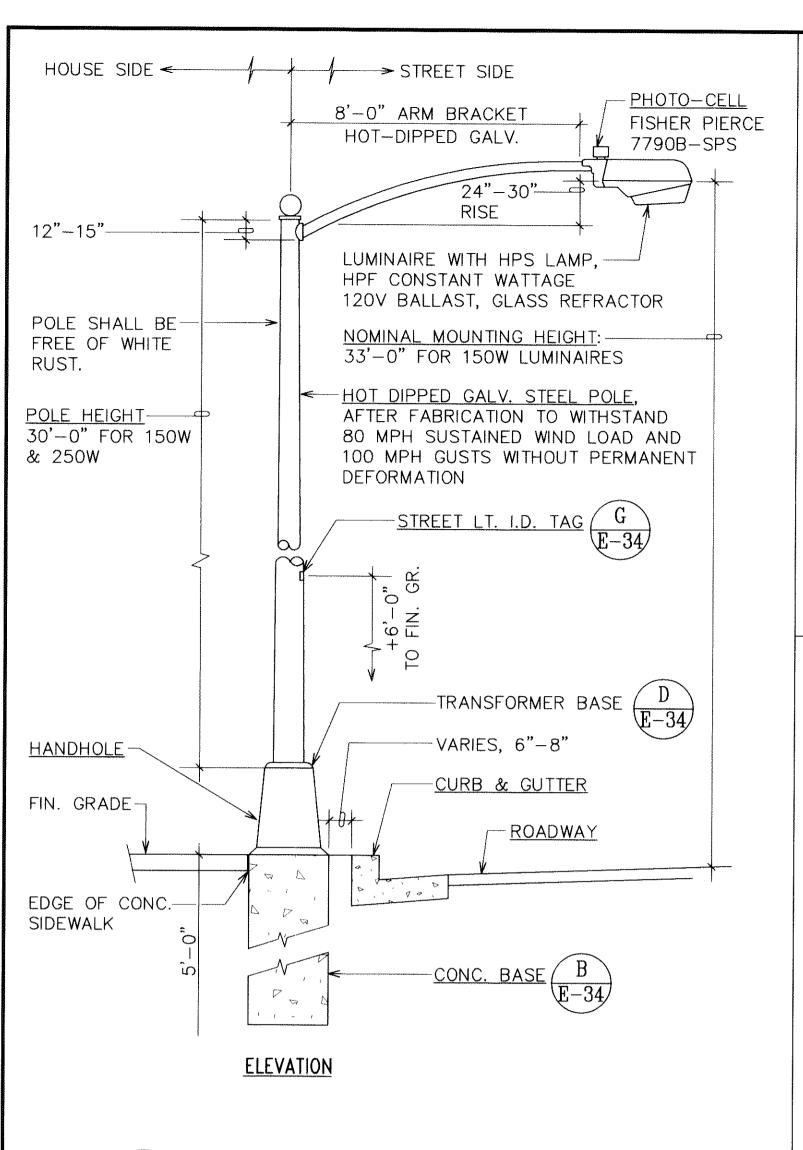
1100 Alekea Street, Sbith Floor

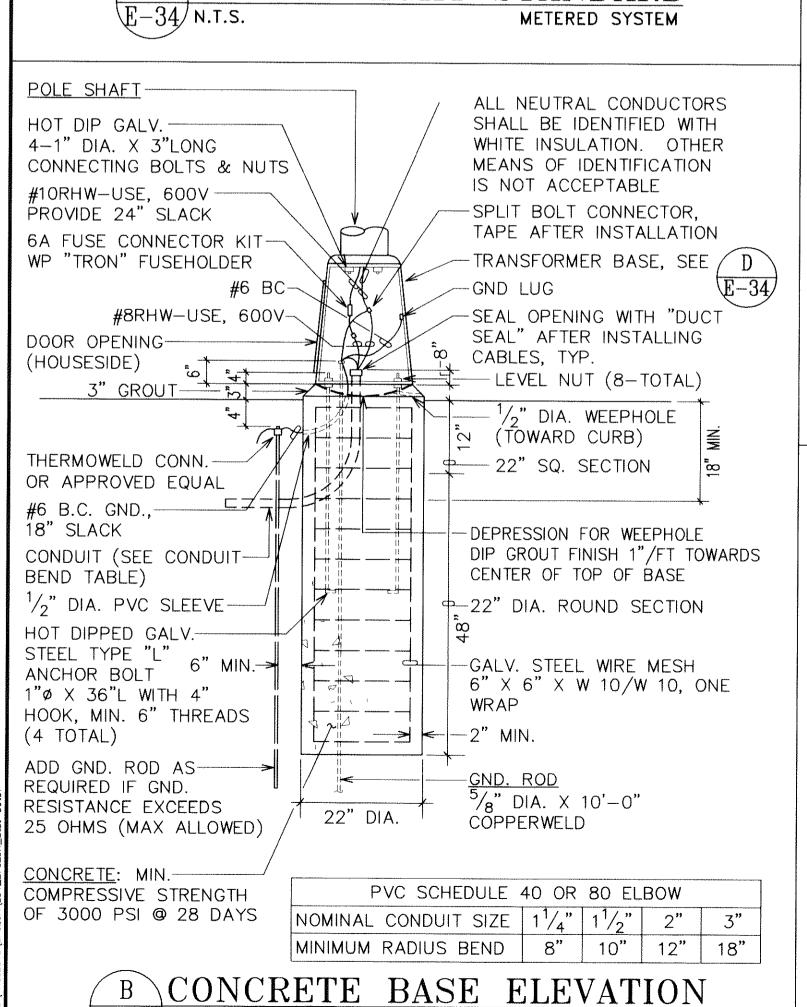
Community Planning and Engineering, Inc.

EAST KAPOLEI II DEVELOPMENT

EAST-WEST ROAD AND ROAD "E"

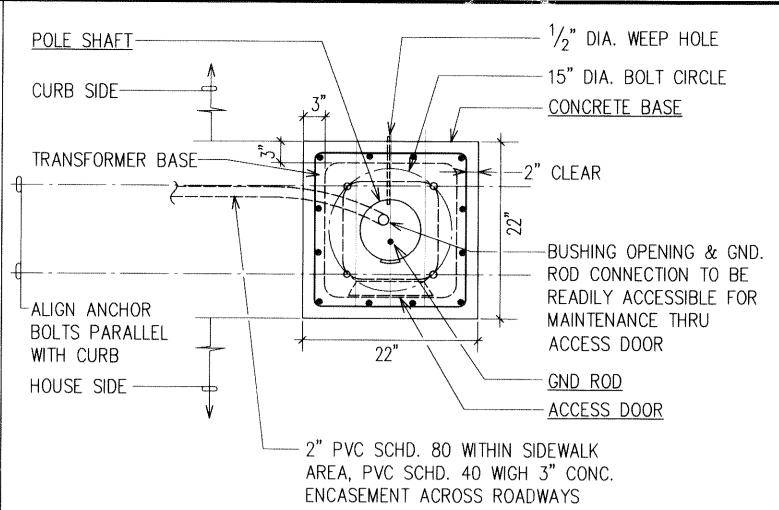
HONOULIULI, EWA, OAHU, HAWAII



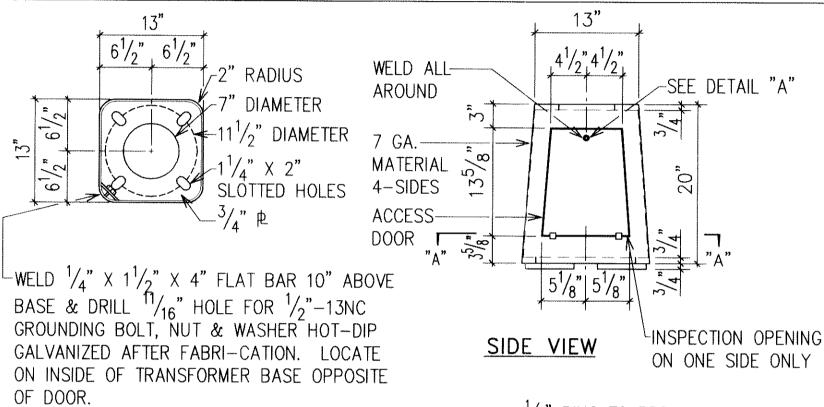


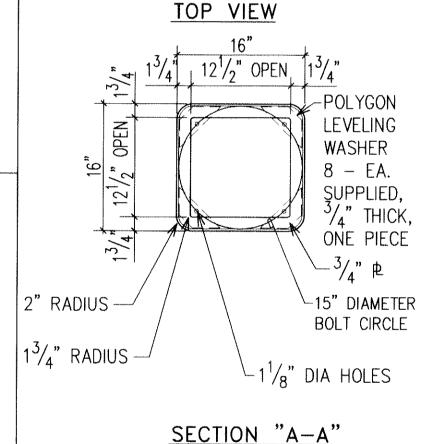
E-34 N.T.S.

A STREET LIGHT STANDARD



CONCRETE BASE PLAN $\left(\mathrm{E}{-34}\right)$ N.T.S.





RING TO PREVENT TURNING OF ALLEN SCREW WITH WRENCH OR PLUMBER'S PLIERS $-\frac{3}{8}$ " ALLEN SCREW

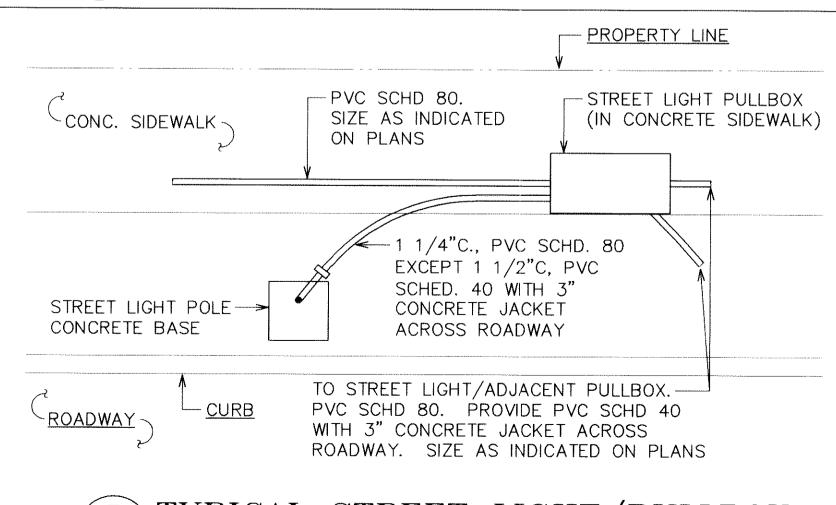
DETAIL "A" NOTES:

1. ALL STEEL SHALL CONFORM TO REQUIREMENTS OF ASTM A36 STEEL. 2. ALL WELDS SHALL BE PERFORMED BY A

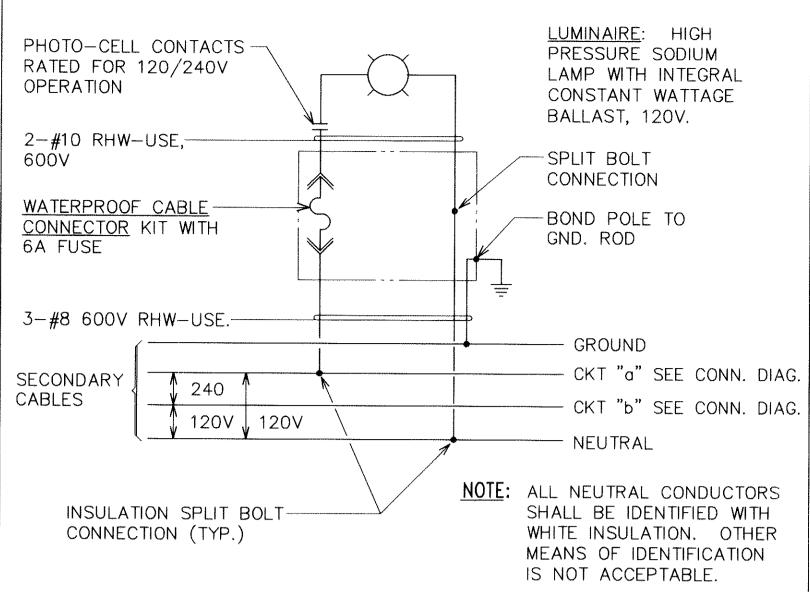
CERTIFIED WELDER. 3. BOLTS FOR BOLTING POLE FLANGE INCLUDED 4-1" X 4" HEX. BOLT WITH NUT & WASHER

SHALL BE HOT-DIPPED GALV. 4. ENTIRE ASSEMBLY SHALL BE HOT-DIPPED GALV. AFTER FABRICATION.

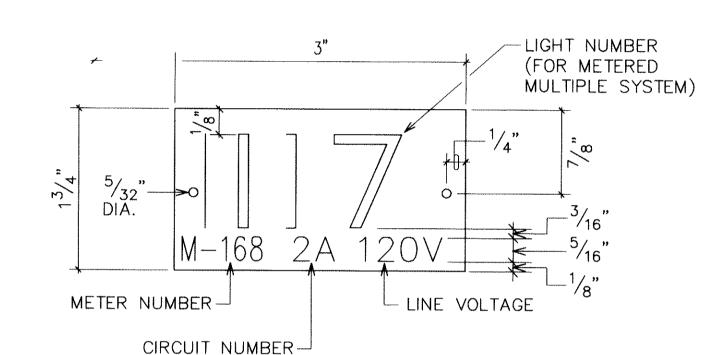
TRANSFORMER BASE DETAIL $\left(\mathrm{E}{-34}\right)$ N.T.S.



TYPICAL STREET LIGHT/PULLBOX E-34 PLAN NOT TO SCALE



STREET LIGHT CONNECTION DIAGRAM (120/240V METERED SYSTEM)



- 1. USE 2 PLY LAMINATED FLEXIBLE PLASTIC BLACK-WHITE. THICKNESS: BLACK CAP SHEET-0.010", WHITE BASE SHEET-0.052".
- 2. NUMBER SIZE SHALL BE 1" HIGH AND ENGRAVED $\frac{1}{8}$ " WIDE, WHITE IN COLOR (NUMBER AS REQUIRED).
- 3. NOMENCLATURE SIZE SHALL BE 5/16" HIGH AND ENGRAVED $^{1}/_{32}$ " WIDE, WHITE IN COLOR (METER NUMBER, CIRCUIT NUMBER AND VOLTAGE AS REQUIRED).
- ATTACH TO ALUMINUM AND STEEL POLES WITH NO. 8 STAINLESS STEEL, 1/2" LONG DRIVE SCREWS IN 1/8" DRILL HOLE. ATTACH TO WOOD POLES WITH 4D ALUMINUM NAILS.
- 5. NUMBERS ARE INSCRIBED BY CUTTING THROUGH "BLACK CAP SHEET" TO **EXPOSE "WHITE LETTERS"**
- 6. ASSIGN CIRCUIT NUMBER FOR SYSTEMS WITH TWO OR MORE CIRCUITS (LETTER INDICATES PANEL BOARD, NUMBER INDICATES CIRCUIT).

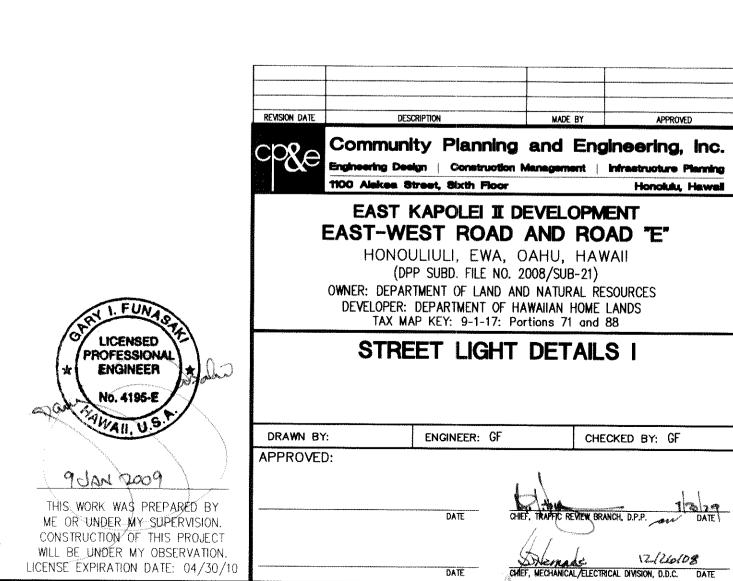
STREET LIGHT I.D. TAG DETAIL (E-34) NOT TO SCALE (METERED SYSTEM)

STREET LIGHTING NOTES:

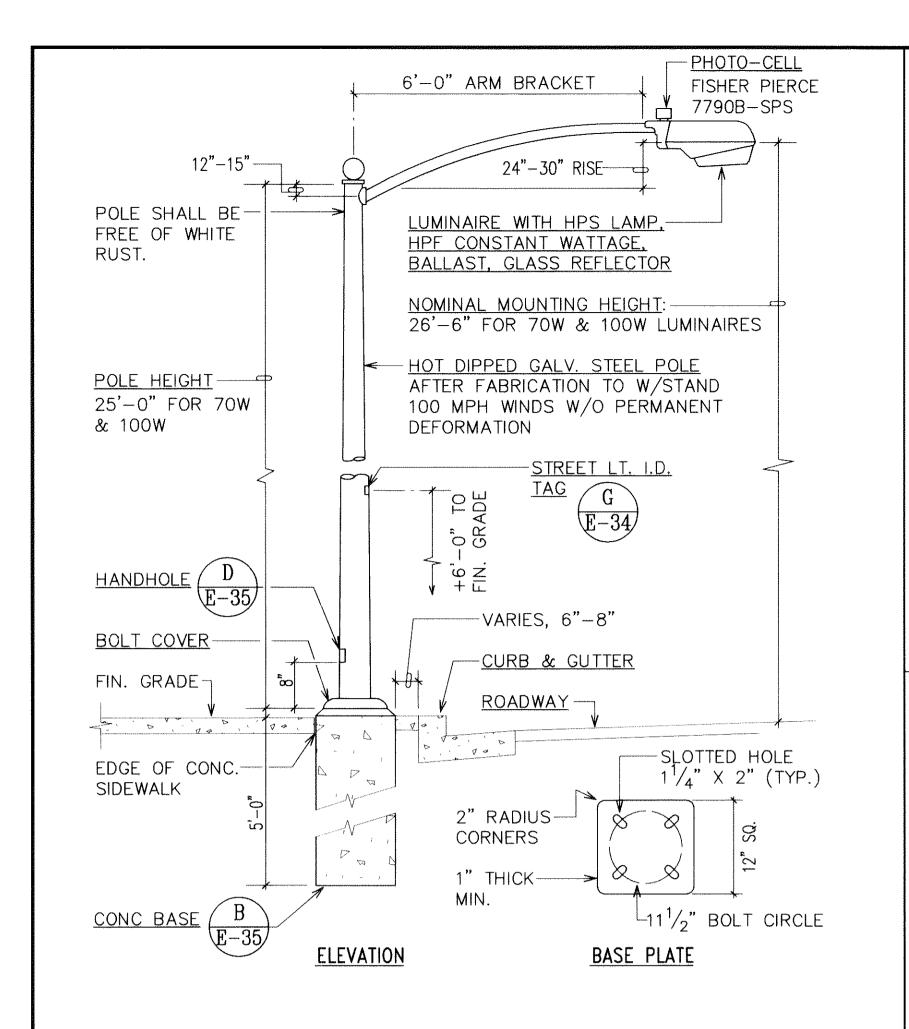
- 1. PRIMARY SERVICE CABLES AND CONNECTION TO STREET LIGHT TRANSFORMER TERMINALS SHALL BE PROVIDED BY HECO AND PAID FOR BY CONTRACTOR (METERED SYSTEM). METERS NO. M-168 & M-169.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND INFORMING HECO PRIOR TO INSTALLATION OF HECO CABLES.
- 3. CONTRACTOR TO NOTIFY & COORDINATE WORK WITH MECHANICAL/ELECTRICAL DIVISION, DEPARTMENT OF DESIGN & CONSTRUCTION, 3 WORKING DAYS IN ADVANCE OF COMMENCING INSTALLATION OF STREET LIGHT SYSTEM (PHONE 768-8431).
- 4. LUMINAIRES TO BE HIGH PRESSURE SODIUM (HPS) TYPE WITH I.E.S. TYPE III LIGHT DISTRIBUTION EXCEPT AS NOTED ON PLAN WATTAGES TO BE AS INDICATED ON THE PLANS.
- 5. TYPICAL CONSTRUCTION DETAILS TO BE PER THIS SHEET & APPLICABLE STANDARD DETAILS OF THE MECHANICAL/ELECTRICAL DIVISION, DEPARTMENT OF DESIGN & CONSTRUCTION.
- 6. ON BOTTOM OF PHOTO-CELL, CONTRACTOR SHALL STENCIL THE DATE OF INSTALLATION.

LUMINAIRE & POLE COUNT:	POLES:	25'-0"	_	<u>M-168</u>	<u>M-169</u>
LOWINAINE & FOLE COUNT.	FULES:	25 -0		U	_
		30'-0"	=	56	57
	LUMINAIRES	S: 100W		0	2
		150W		56	57

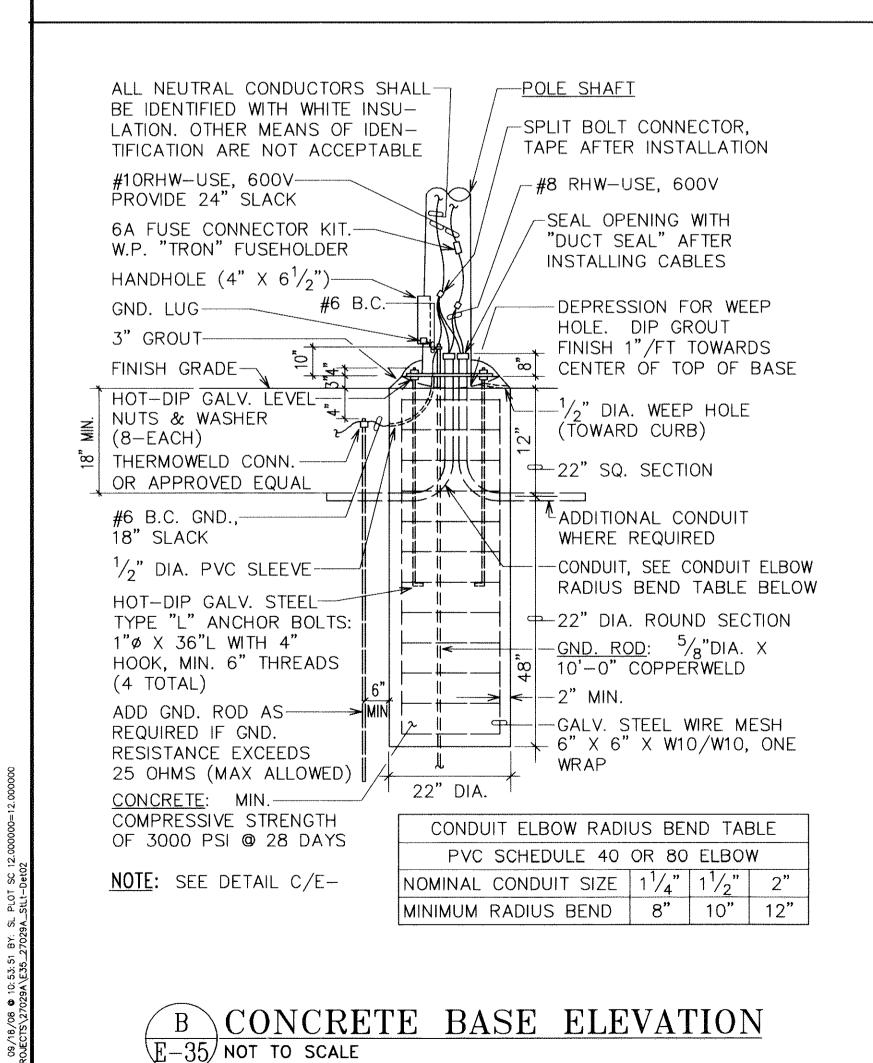
- 8. AT ALL TIMES DURING CONSTRUCTION PERIOD, CONTRACTOR SHALL MAINTAIN ONE SET OF APPROVED PLANS AT THE PROJECT SITE.
- THE CONTRACTOR SHALL MEASURE AND RECORD THE GROUND RESISTANCE AT EACH STANDARD WITH NO EXTERNAL GROUND WIRES CONNECTED TO THE GROUND ROD. CONTRACTOR SHALL SCHEDULE GROUND RESISTANCE MEASUREMENTS 48 HOURS IN ADVANCE AND SHALL NOT PROCEED WITH MEASUREMENTS UNTIL APPROVAL IS GRANTED. SCHEDULES ARE SUBJECT TO CHANGE DEPENDING UPON WEATHER CONDITIONS. REPORTS SHALL INCLUDE NAME OF PERSONNEL CONDUCTING THE TEST, METER TYPE AND SERIAL NUMBER, DATE OF TEST AND SOIL CONDITIONS. TEST RESULTS SHALL BE CERTIFIED BY THE CONTRACTOR AND SUBMITTED TO THE CITY.
- 10. CONTRACTOR SHALL ARRANGE FOR HECO TO ENERGIZE STREET LIGHTS A MINIMUM OF SIX HOURS BEFORE FINAL INSPECTION & ACCEPTANCE. CONTRACTOR TO PAY FOR ALL COSTS, 6 HOURS BEFORE AND DURING INSPECTION.
- 11. FINAL ACCEPTANCE AND INSPECTION WILL BE UNDERTAKEN ONLY AFTER ALL WORK HAS BEEN COMPLETED & THE "AS-BUILT" VELLUM TRACINGS HAVE BEEN RECEIVED BY THE CITY & COUNTY OF HONOLULU, DEPARTMENT OF DESIGN & CONSTRUCTION.
- 12. UPON COMPLETION OF FINAL INSPECTION BY ENGINEER & THE CITY & COUNTY, CONTRACTOR SHALL OBTAIN WRITTEN ACCEPTANCE OF STREET LIGHT SYSTEM FROM THE MECHANICAL/ELECTRICAL DIVISION, DEPARTMENT OF DESIGN & CONSTRUCTION, CITY & COUNTY OF HONOLULU.
- 13. CONTRACTOR SHALL NOT BACKFILL TRENCHES UNTIL WORK IS APPROVED BY THE STREET LIGHT INSPECTOR
- 14. THE CONTRACTOR SHALL INFORM THE STREET LIGHT INSPECTOR OF ALL CONCRETE POURS AT LEAST 2 WORKING DAYS IN ADVANCE. CONCRETE SHALL NOT BE POURED UNTIL APPROVAL IS GRANTED BY THE CITY AND COUNTY STREET LIGHT INSPECTOR.
- 15. SUBMIT SHOP DRAWINGS FOR ALL STREET LIGHT COMPONENTS INCLUDING PULLBOXES FOR APPROVAL.

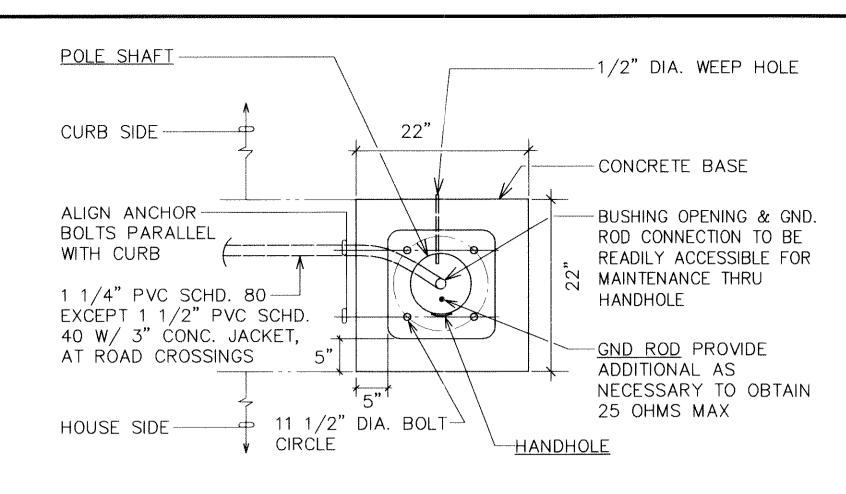


DWG. NO. **E-34** SHEET <u>75</u> OF <u>94</u> SHEETS

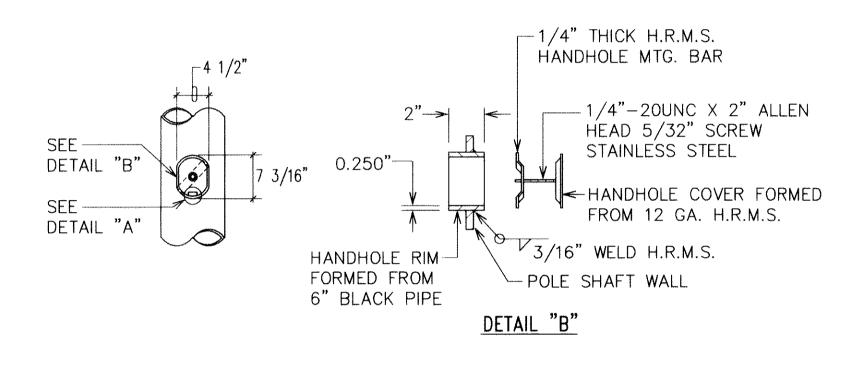


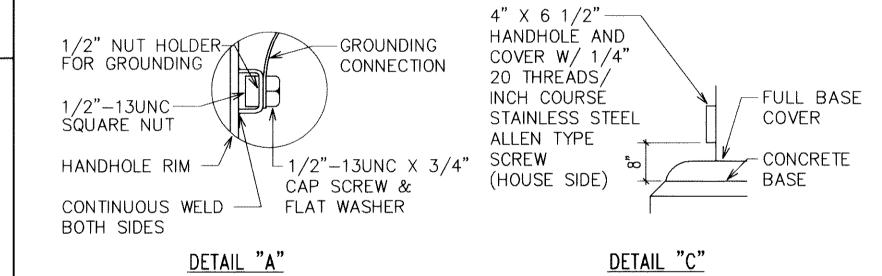




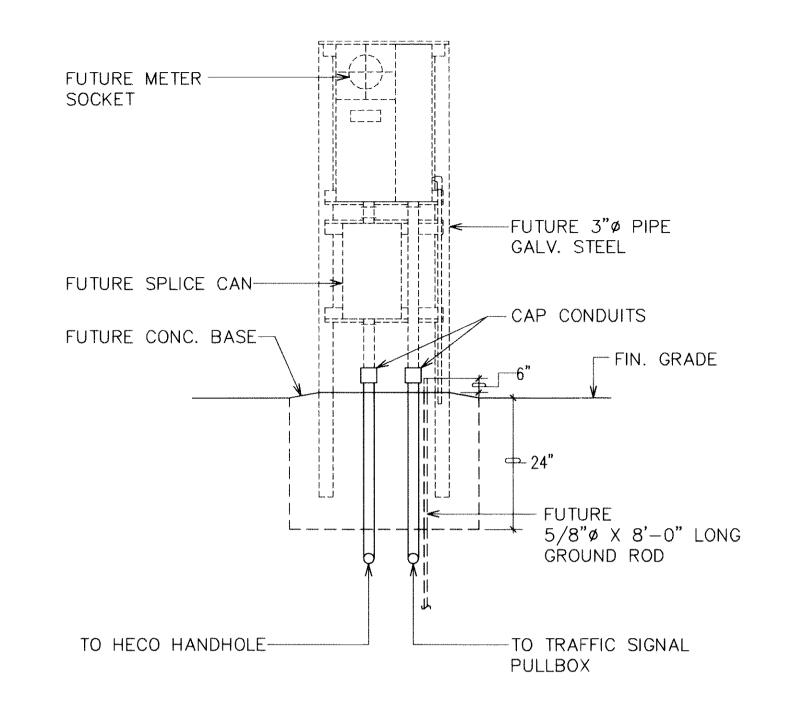


CONCRETE BASE PLAN E-35 NOT TO SCALE





STREET LIGHT STANDARD HANDHOLE DETAILS E-35 NOT TO SCALE



FUTURE TRAFFIC SIGNAL METERING EQUIPMENT ELEVATION NOT TO SCALE

PROFESSIONAL & MISCELLANEOUS DETAILS ENGINEER No. 4195-度 ENGINEER: GF DRAWN BY: CHECKED BY: GF APPROVED:

Community Planning and Engineering, Inc.

EAST KAPOLEI II DEVELOPMENT

EAST-WEST ROAD AND ROAD "E"

HONOULIULI, EWA, OAHU, HAWAII

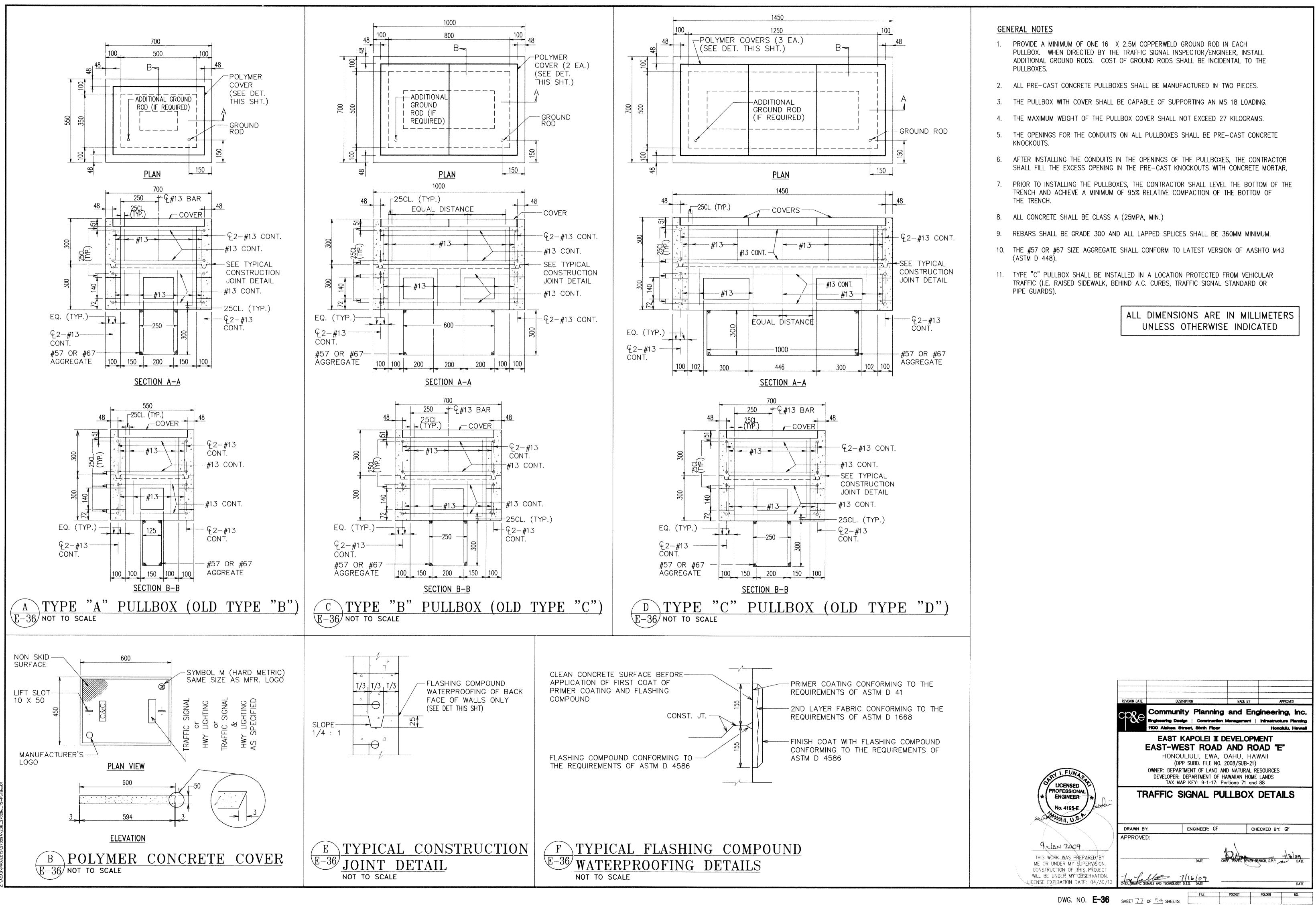
(DPP SUBD. FILE NO. 2008/SUB-21) OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES

DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portions 71 and 88

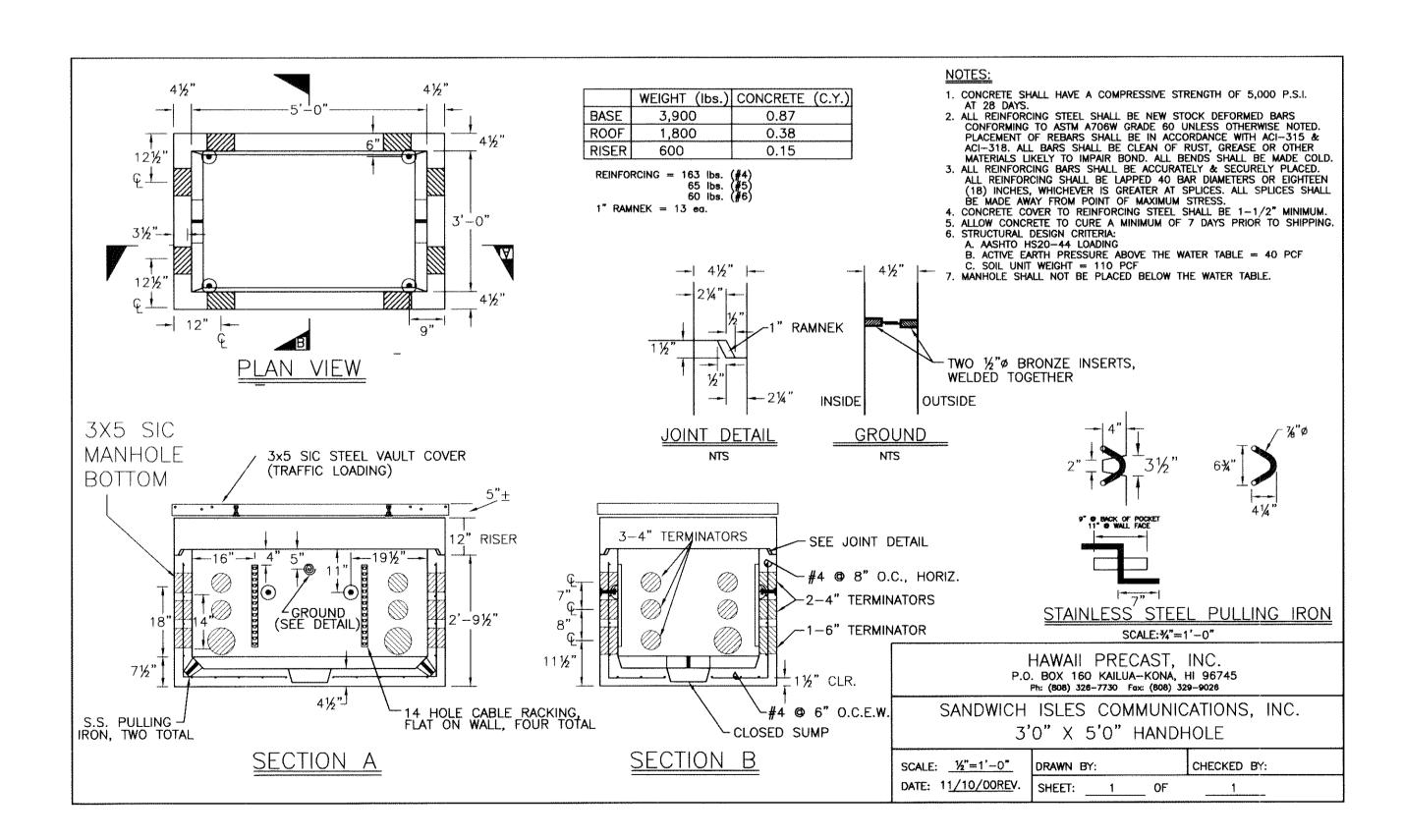
STREET LIGHT DETAILS II

1100 Alakea Street, Sixth Floor

POOL HALPP THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/1



UH 3x5 COVER



<u>UH 3x5</u>



CONSTRUCTION-OF-THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/1

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	000	Community Planning	and Engl	neering. Ir

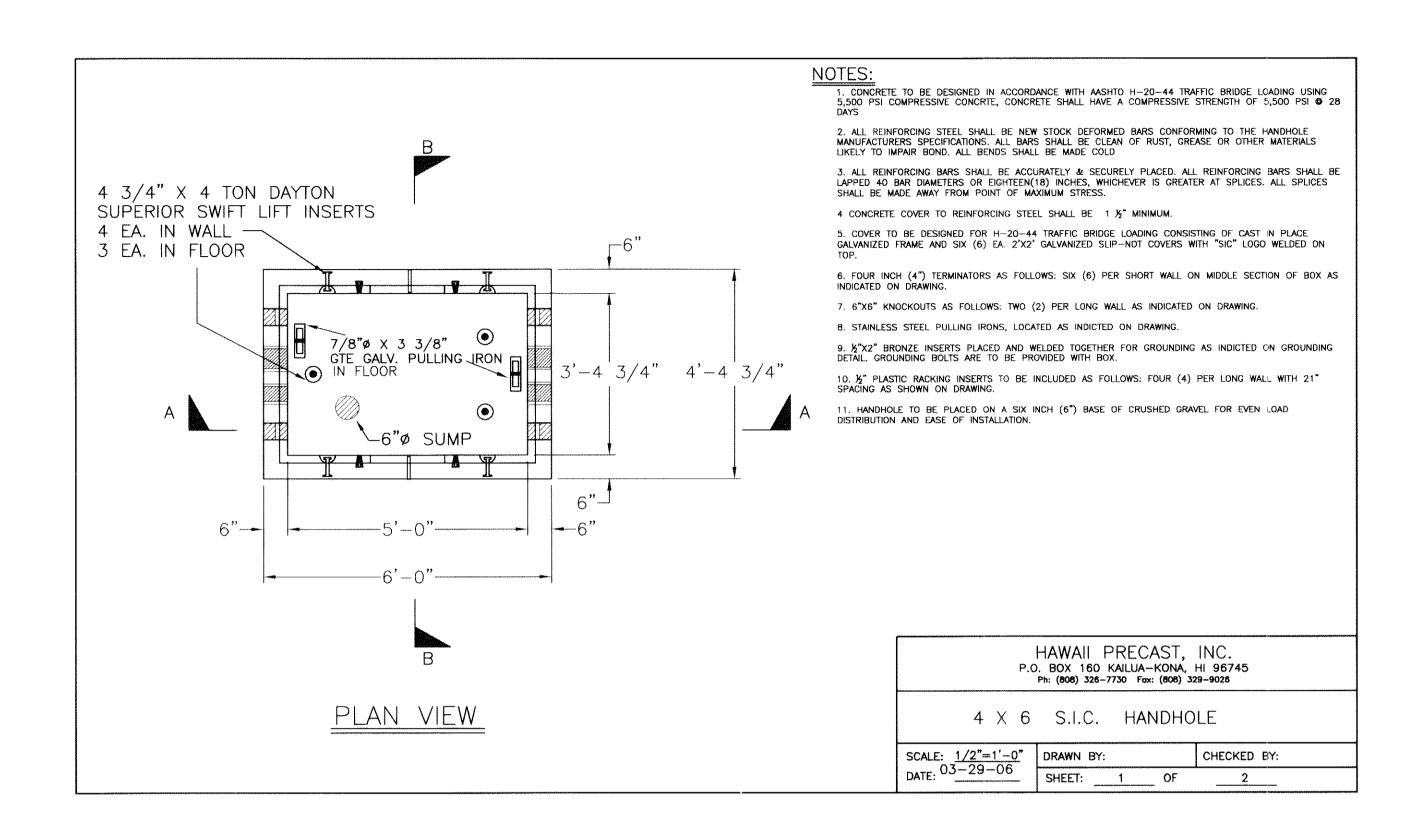
EAST-WEST ROAD AND ROAD "E" HONOULIULI, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2008/SUB-21) OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES

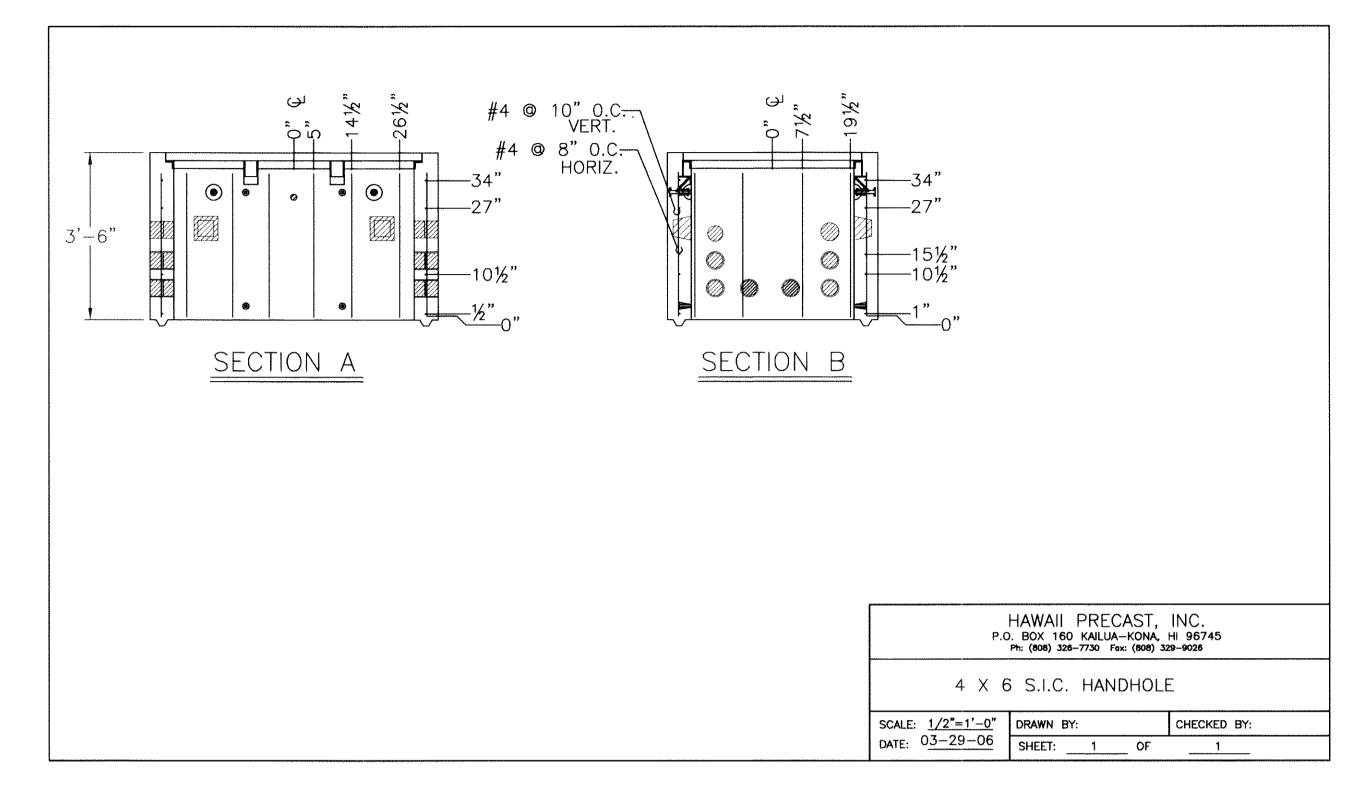
DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portions 71 and 88

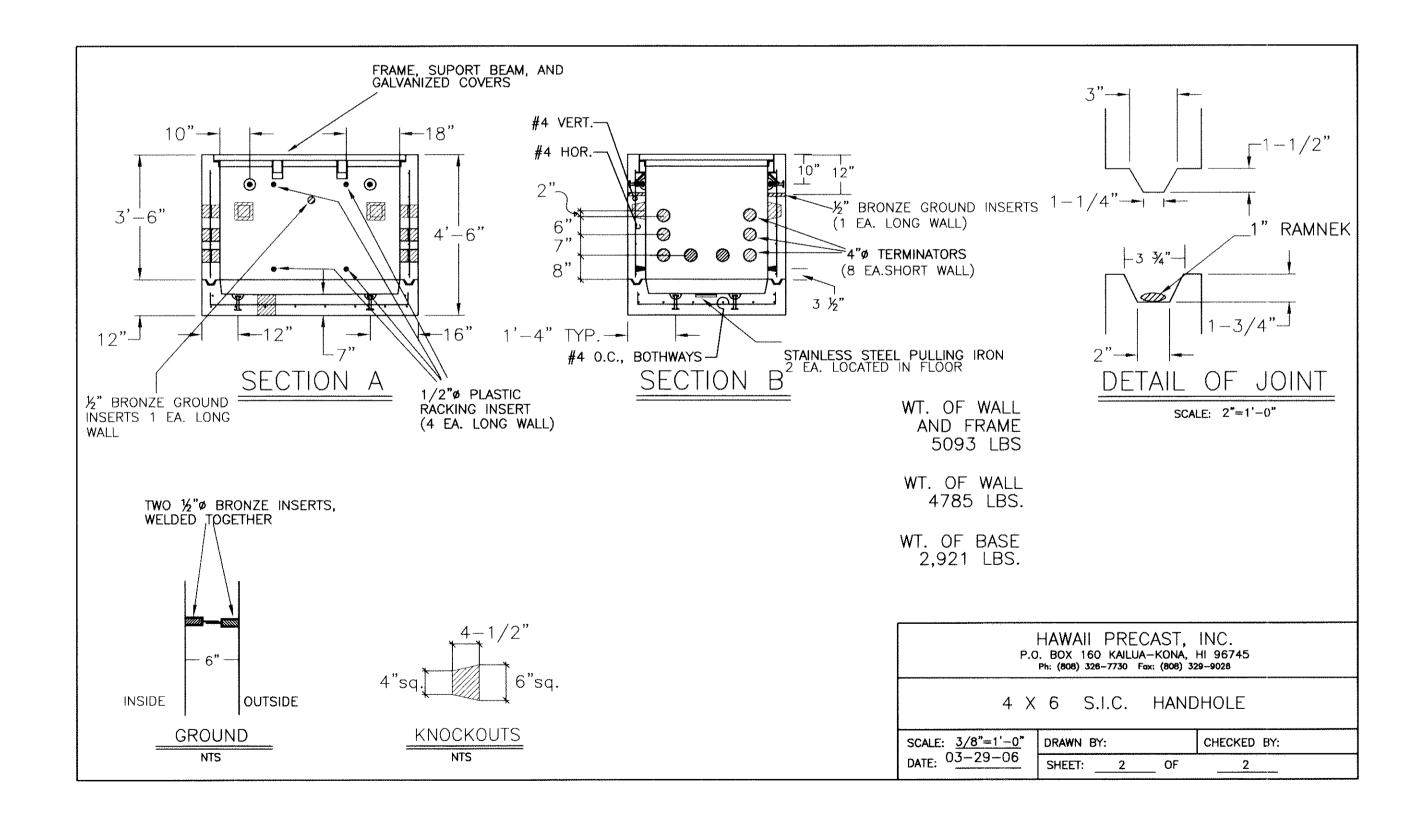
SIC REFERENCE DRAWINGS I

RAWN BY:	ENGINEER: GF	CHECKED BY: GF	
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	DATE		DATE
el III	2-16-08		
DWICH ISLES COMMUNICATIONS, INC.	DATE		DATE

DWG. NO. **E-37** SHEET <u>78</u> OF <u>94</u> SHEETS

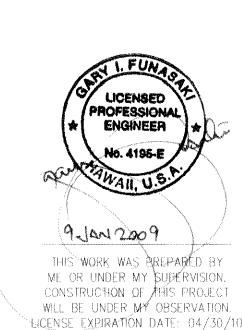






<u>UH 4x6</u>

FOR REFERENCE ONLY



Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1100 Alakea Street, Sixth Floor Honolulu, Hawaii

EAST KAPOLEI II DEVELOPMENT EAST-WEST ROAD AND ROAD "E" HONOULIULI, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2008/SUB-21)

(DPP SUBD. FILE NO. 2008/SUB-21)
OWNER: DEPARTMENT OF LAND AND NATURAL RESOURCES
DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portions 71 and 88

SIC REFERENCE DRAWINGS II

RAWN BY:	ENGINEER: GF	CHECKED BY: GF
PROVED:		•
	DATE	DATE
	1: 12-16-08	
DWICH IS LES COMMUNICATIO	NS, INC. DATE	DATE

DWG. NO. **E-38** SHEET <u>79</u> OF <u>94</u> SHEETS

